Massachusetts Mutual Life Insurance Company
Management's Discussion and Analysis
Of the 2008 Financial Condition and Results of Operations

General

Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with the Audited Statutory Financial Statements, Notes to Statutory Financial Statements, and Statutory Annual Statements. This Management's Discussion and Analysis reviews the financial condition of Massachusetts Mutual Life Insurance Company (**"MassMutual," "us," "we" or "our"**) as of December 31, 2008 and 2007, our results of operations for the past three years and, where appropriate, factors that may affect our future financial performance.

We are a growth-oriented, diversified financial services company that seeks to provide superior value for policyholders and other customers by achieving exceptional results. We are in the business of helping our customers achieve financial success while protecting their families and businesses. We are committed to maintaining a position of preeminent financial strength by achieving consistent and long-term profitable growth.

This will be accomplished by developing and distributing a broad and superior portfolio of innovative financial products and services, sophisticated asset/liability management, rigorous expense control, prudent underwriting standards, continued efforts to improve persistency and retention levels, and continued commitment to the high credit quality and disciplined diversification of our general account investment portfolio.

Our statutory net loss was $993 million in 2008 compared to net income of $140 million in 2007. As of and for the year ended December 31, 2008, we had $83.3 billion in general account statutory assets, $114.3 billion in total statutory assets, net gain from operations (after dividends to policyholders and taxes) of $240 million, over 2.2 million individual policies in force and $377 billion of life insurance in force. Our total adjusted capital, as defined by the National Association of Insurance Commissioners (the "**NAIC**"), decreased to $9.5 billion as of December 31, 2008 compared to $10.3 billion as of December 31, 2007.

The following table sets forth the calculation of total adjusted capital:

	December 31, 2008	December 31, 2007
	(In Millions)	
Surplus [1]	$ 8,463	$ 8,008
Asset valuation reserve [2]	413	1,596
One-half of the apportioned dividend liability [2]	672	690
Total adjusted capital [3]	**$9,548**	**$10,294**

[1] Includes $250 million of surplus notes maturing in 2023, $100 million of surplus notes maturing in 2024 and $250 million of surplus notes maturing in 2033.

[2] Consolidated for MassMutual, C.M. Life and MML Bay State

[3] Defined by the NAIC as surplus plus consolidated asset valuation reserve (**"AVR"**) and one-half of the consolidated apportioned dividend liability.

Our financial strength ratings are AAA (Extremely Strong) from Standard & Poor's, A++ (Superior) from A.M. Best Company, AAA (Exceptionally Strong) from Fitch Ratings, and Aa1 (Excellent) from Moody's Investors Service. Each rating agency independently assigns ratings based on its own separate review and takes into account a variety of factors in making its decision. Ratings are subject to change and there can be no assurance of the ratings that will be afforded to us in the future.

Financial strength ratings are based upon an independent review of MassMutual and its domestic insurance subsidiaries and that of the industry in which we operate. A rating trigger refers to any contractual clause in our contracts requiring action by us or resulting in financial consequences in the event of a downgrade of our financial strength rating below a specified level. As of December 31, 2008, we had one group life insurance contract with an account value of $388 million that contained a rating trigger. If our financial strength ratings fall significantly, we are required to pursue the transfer of the risks of the contract to another company.

We issued short-term debt in the form of commercial paper during 2008 with maturities up to 270 days from the date of issue. MassMutual, along with MassMutual Funding, LLC, renewed a $500 million senior unsecured revolving credit facility to support our commercial paper borrowings and extend its maturity from one (1) to five (5) years. In 2007, the credit facility agreement was amended to remove MassMutual Funding, LLC as a borrower; subsequently MassMutual Funding, LLC was liquidated. If our financial strength ratings fall two levels or more, we will incur additional bank costs related to our credit facility. The commercial paper program has the top rating from both Standard & Poor's (A1+) and Moody's Investors Service (P1).

As of December 31, 2008, there were no significant statutory or regulatory issues which would impair our financial position or liquidity, but there can be no assurance that such issues will not arise in the future. To the best of management's knowledge, we are not included on any regulatory or similar "watch list".

Our insurance products include a wide range of products and services distributed through a network of general agents, agents and affiliated distributors, broker dealers and banks, to customers primarily in the United States. Products include whole life insurance, universal life insurance, variable universal life insurance, term life insurance, bank-owned and corporate-owned life insurance, individual annuities, group annuities, individual disability income insurance and long-term care insurance.

The U.S. Insurance Group combines the Life, Executive Benefits, Disability Income and Long-Term Care lines of business.

Individual life insurance (**"Life"**) business provides a broad range of products designed to meet a variety of needs, including death benefit protection, wealth transfer, income replacement, cash value accumulation, as well as supplemental retirement, estate and business planning. Life offers a diverse product offering encompassing whole life insurance, universal life insurance, variable life insurance, term life insurance, survivorship and several types of riders. The new whole life product introduced in 2007 is experiencing strong sales. Three new life products were introduced during 2008 and all offer level premium participating policies. Whole Life Legacy 10 Pay and Whole Life Legacy 65 provide a level guaranteed face amount for the lifetime of the insured. Whole Life Legacy High Early Cash Value is designed to provide a high early cash value to the insured.

Executive Benefits provides a range of products including corporate-owned life insurance (**"COLI"**), small and large case bank-owned life insurance (**"BOLI"**), executive group carve out life insurance products and private placement insurance products for the high net worth marketplace. Our clients include financial institutions, corporations, professional firms and certain high net worth individuals.

Disability Income provides products to insure income replacement in the event of disability. Products are sold in the individual, small business and worksite markets.

Long-Term Care is offering a new product called SignatureCare 500 series, our first participating Long-Term Care product.

Retirement Income focuses on meeting the needs of people approaching or living in retirement. Retirement Income's combination of financial strength and product innovation help it compete successfully in this market and meet the evolving needs of the rapidly growing population of retiring baby boomers. Products and programs include deferred annuities, immediate annuities and an investment advisory program. Certain individual variable annuity products issued by MassMutual offer guaranteed minimum death and living benefits. Guaranteed minimum death benefits provide a death benefit if the contract holder dies and the contract value is less than a guaranteed amount specified in the contract. The primary types of living benefits offered by MassMutual are guaranteed minimum accumulation, income and withdrawal benefits. In January 2008, MassMutual launched a guaranteed minimum withdrawal benefit rider, available on selected proprietary deferred annuities. MassMutual hedges its variable annuity guarantees using a variety of derivatives managing both its equity market and interest rate exposure on a dynamic basis. Additionally, we manage our product offerings to control our risk exposure. As an example, we ceased offering our 6% GMIB in December 2008 and are actively reviewing our other living benefit guarantees. The Investment Advisory Program was created to increase MassMutual's focus on retention of assets as participants leave or change employment and need to make decisions about their accumulated retirement assets.

Retirement Services offers products that serve companies with $1 million to $500 million in retirement plan assets and meet the needs of more than 7,500 plan sponsors and more than one million participants, providing companies with the valuable ability to entirely outsource their retirement benefit operations. During 2008, Retirement Services completed the purchase of First Mercantile Trust, a company which provides retirement plan recordkeeping and investment management services throughout the United States. With over $3 billion in assets under management as of December 31, 2008, First Mercantile's operations have added complementary products and further scale to MassMutual's existing retirement plan business.

Our Financial Products business offers specialized institutional investment products, currently funding agreements for domestic and international institutional investors and single premium annuity contracts for terminating defined benefit plans. In 2007, Financial Products took over the operations of Settlement Solutions, which sold and administered structured settlements used to resolve settlements of personal physical injury tort liability claims, as a run-off block of business. Financial Products also administers a run-off block of Guaranteed Investment Contracts for traditional pension plans, most maturing in 2009.

Forward-Looking Information

The Private Securities Litigation Reform Act of 1995 provides a "safe harbor" for forward-looking statements, which are identified as such and are accompanied by the identification of important factors, which could cause a material difference from the forward-looking statements.

Certain information contained in this discussion is or may be considered forward-looking. Forward-looking statements are those not based on historical information, but rather, relate to future operations, strategies, financial results or other developments, and contain terms such as "may," "expects," "should," "believes," "anticipates," "intends," "estimates," "projects," "goals," "objectives" or similar expressions.

Forward-looking statements are based upon estimates and assumptions. These statements may change due to business uncertainties, economic uncertainties, competitive uncertainties, and other factors, many of which are beyond our control. Additionally, our business decisions are also subject to change. We do not publicly update or revise any forward-looking statements as a result of new information, future developments or otherwise.

Results of Operations

The following table sets forth the components of statutory net income (loss) for the years presented:

	Years Ended December 31, 2008	2007	2006	% Change 08 vs. 07	% Change 07 vs. 06
	(In Millions)				
Revenue:					
Premium income	$ 13,238	$ 12,837	$ 12,484	3%	3%
Net investment income	4,863	4,617	4,155	5	11
Reserve adjustments on reinsurance ceded	61	41	-	49	NM
Fees and other income	258	414	388	(38)	7
Total revenue	18,420	17,909	17,027	3	5
Benefits and expenses:					
Policyholders' benefits	11,032	10,564	10,187	4	4
Change in policyholders' reserves	4,400	3,572	3,494	23	2
General insurance expenses	1,028	1,063	1,090	(3)	(2)
Commissions	535	523	513	2	2
State taxes, licenses and fees	121	124	112	(2)	11
Total benefits and expenses	17,116	15,846	15,396	8	3
Net gain from operations before dividends and federal income taxes	1,304	2,063	1,631	(37)	26
Dividends to policyholders	1,332	1,373	1,226	(3)	12
Net gain (loss) from operations before federal income taxes	(28)	690	405	(104)	70
Federal income tax expense (benefit)	(268)	119	(50)	(325)	338
Net gain from operations	240	571	455	(58)	25
Net realized capital gains (losses), after tax and transfers to interest maintenance reserve	(1,233)	(431)	248	(186)	(274)
Net income (loss)	**$ (993)**	**$ 140**	**$ 703**	**(809)%**	**(80)%**

NM = not meaningful or in excess of 900%

Net income in 2008 decreased $1.1 billion primarily due to a $331 million decrease in net gain from operations and an $802 million increase in net realized capital losses. The major components of the decrease in net gain from operations include an increase in the change in policyholders' reserves of $828 million, an increase in policyholders' benefits of $468 million and a decrease in fees and other income of $156 million, partially offset by an increase in premium income of $401 million, a decrease in federal income taxes of $387 million, an increase in net investment income of $246 million and a decrease in dividends to policyholders of $41 million. The increase in net realized capital losses was primarily due to other-than-temporary impairments largely attributable to the decline in the subprime and Alt-A residential mortgage markets and investments in partnerships and limited liability companies (**"LLCs"**).

Net income decreased $563 million in 2007 primarily due to a $116 million increase in net gain from operations which was more than offset by a $679 million increase in net realized capital losses. The major components of the increase in net gain from operations includes a $462 million increase in net investment income and a $353 million increase in premium income, partially offset by a $377 million increase in policyholders' benefits, a $169 million increase in federal income tax expense and a $147 million increase in dividends to policyholders. The increase in net realized capital losses was primarily due to other-than-temporary impairments attributable to the decline in residential mortgage markets.

Selected premium income information is presented below:

	Years Ended December 31, 2008	2007	2006	% Change 08 vs. 07	% Change 07 vs. 06
		(In Millions)			
Premium income:					
Whole life	$ 3,224	$ 2,967	$ 2,871	9%	3%
Universal, variable and group life	745	1,513	1,334	(51)	13
Annuities and supplemental contracts	2,555	1,759	1,702	45	3
Disability income	457	441	427	4	3
Defined benefit and contribution	5,701	5,718	5,639	-	1
GIC and single premium annuity contracts	300	132	184	127	(28)
Other	256	307	327	(17)	(6)
Total	**$13,238**	**$12,837**	**$12,484**	**3%**	**3%**

Premium income includes considerations on life, annuity, supplementary, accident and health, guaranteed investment contracts (**"GICs"**), defined benefit and defined contribution contracts. Premium income increased $401 million in 2008 primarily due to increases in annuities and supplemental contracts of $796 million, whole life of $257 million and single premium annuity contracts of $168 million, partially offset by a decrease in universal, variable and group life premium of $768 million. The increase in annuities and supplemental contracts is primarily due to the success of variable annuity products with living benefit riders. Additionally, fixed annuity sales have increased primarily due to the current low interest rate environment, which makes these products more attractive relative to other investment and savings options. Whole life premium increased due to higher paid up additions, as well as increased sales and renewals. The increase in single premium annuity contracts is due to higher terminal funding sales. These increases were partially offset by a decrease in universal, variable and group life premium primarily due to lower bank-owned life insurance (**"BOLI"**) sales, due in part to the impact of the credit crisis on banks.

Premium income increased $353 million in 2007 primarily due to increases in universal, variable and group life premium of $179 million, whole life premium of $96 million, defined benefit and contribution premium of $79 million and annuities and supplemental contracts of $57 million, partially offset by a decrease in GICs and single premium annuity contracts of $52 million due to MassMutual exiting the GIC market in 2006. Universal, variable and group life premium increased primarily due to higher BOLI and private client group sales. The increase in whole life premium was due in part to favorable renewals and higher paid up additions from the increased dividend scale. Annuities and supplemental contract premium increased primarily due to increased sales of variable products, partially offset by the decision to exit the Settlement Solutions business in early 2007.

The components of net investment income are set forth below:

	Years Ended December 31,			% Change	% Change
	2008	**2007**	**2006**	**08 vs. 07**	**07 vs. 06**
		(In Millions)			
Net investment income:					
Bonds	$ 2,435	$ 2,448	$ 2,410	(1)%	2%
Preferred stocks	6	18	4	(67)	350
Common stocks - subsidiaries and affiliates	660	390	201	69	94
Common stocks - unaffiliated	27	52	66	(48)	(21)
Mortgage loans	712	702	626	1	12
Policy loans	657	606	557	8	9
Real estate	213	221	221	(4)	-
Partnerships and LLCs	290	445	293	(35)	52
Derivatives and other invested assets	266	150	181	77	(17)
Cash, cash equivalents and short-term investments	76	89	104	(15)	(14)
Total gross investment income	5,342	5,121	4,663	4	10
Amortization of interest maintenance reserve	(37)	(24)	(57)	(54)	58
Net gain from separate accounts	2	7	18	(71)	(61)
Investment expenses	(444)	(487)	(469)	9	(4)
Net investment income	**$ 4,863**	**$ 4,617**	**$ 4,155**	**5%**	**11%**

Net investment income, including interest maintenance reserve **("IMR")** amortization, increased $246 million in 2008 primarily due to an increase in dividends of $303 million received from MassMutual Holding, LLC, **("MMHLLC")** a wholly owned subsidiary, which was partially offset by a decrease in dividends received on common stock mutual funds of $28 million. In addition, there were increases in income of $115 million from derivatives, primarily due to increases in derivative swap income of $94 million and forward income of $20 million; and increases of $51 million from policy loans on higher average asset balances. Increases were partially offset by a decrease in income of $155 million from partnerships and LLCs and $25 million in decreased dividends from unaffiliated common stocks.

Net investment income, including IMR amortization and net gains from separate accounts, increased $462 million in 2007 due to an increase in income from common stocks, partnerships and LLCs, mortgage loans, policy loans, bonds and preferred stocks, as well as a decrease in negative IMR amortization. These increases were partially offset by decreases in income from derivatives and other invested assets and cash, cash equivalents and short-term investments.

After deducting all investment expenses and including separate account net gains and IMR amortization, the net annualized yields were 6.0% for the year ended December 31, 2008 and 6.4% for the year ended December 31, 2007. In 2008, yields on partnerships and LLCs, common and preferred stocks, mortgage loans and long and short-term bonds decreased while yield on real estate and policy loans increased. We calculate the yield before federal income taxes as (a) gross investment income divided by (b) the monthly average of invested assets plus investment income due and accrued, net of foreign exchange adjustments, unrealized gains and losses, and investment-related liabilities, less half the gross investment income. For stock yields, investment income is net of affiliated dividends from MMHLLC. Real estate yields are calculated net of depreciation and direct real estate expenses.

Bond gross investment income decreased $13 million in 2008 due to decreased yields on increased average asset balances. Average bond investments were $42.7 billion in 2008 and $40.3 billion in 2007. Yields on bonds decreased from 6.3% in 2007 to 5.8% in 2008. Bond gross investment income increased $38 million in 2007 due to increased average asset balances. Average bond investments were

$40.3 billion and $38.8 billion in 2007 and 2006, respectively. Yields increased from 6.2% in 2006 to 6.3% in 2007.

Income from common stocks increased $245 million in 2008 due to increased dividends received from our affiliate, MMHLLC of $303 million which were partially offset by decreased dividends received on common stock mutual funds of $28 million and decreased income from unaffiliated common stock of $25 million. Income from common stocks increased by $175 million in 2007 due to increases in dividends received from MMHLLC.

Mortgage loan gross investment income increased $10 million in 2008 primarily due to higher average asset balances, which rose from $10.7 billion in 2007 to $11.6 billion in 2008. Increased income included $13 million from residential loan pools and $3 million in decreased income from commercial loans. Yields decreased in 2008 to 6.2% from 6.8% in 2007. In 2007, mortgage loan gross investment income increased $76 million due to increases in commercial loan income of $43 million and residential loan pool income of $33 million.

The $51 million increase in policy loan gross investment income in 2008 is primarily due to an increase in the average asset balance, which rose from $8.1 billion in 2007 to $8.6 billion in 2008. The 2007 increase of $49 million was due to an increase in the average asset balance, which rose from $7.5 billion in 2006 to $8.1 billion in 2007.

Real estate net investment income, net of depreciation and direct real estate expenses, decreased by $8 million in 2008 on decreased average assets of $1.1 billion in 2008 compared to $1.2 billion in 2007. The real estate yield increased to 4.7% in 2008 from 4.4% in 2007. In 2007, the real estate income remained unchanged from 2006.

Partnerships and LLCs gross investment income decreased $155 million in 2008, primarily due to a decrease in equity method income of $156 million. In 2007, gross investment income from partnerships and LLCs increased $152 million primarily due to distributions received on the sale of underlying investments.

In 2008, the increase in derivatives and other invested asset gross investment income of $116 million was primarily due to an increase in interest rate swap income of $96 million and a decrease in forward contract losses of $19 million. In 2007, the $31 million decrease in derivative and other investment income was primarily driven by an increase in forward contract losses of $18 million and a decrease in currency swap income of $9 million.

The cash, cash equivalents and short-term gross investment income decreased $13 million in 2008. The decrease was primarily due to lower yields on short-term investments on higher average assets. In 2007, gross investment income on cash, cash equivalents and short-term investments decreased $15 million due to a decrease in the average investment from $2.3 billion in 2006 to $1.6 billion in 2007.

Amortization of IMR decreased $13 million in 2008 primarily due to decreases in amortization of current year asset gains of $13 million from forwards and $5 million from bonds, preferred stock and short-term investments which were partially offset by increases in amortization of $6 million from swaps, $5 million from futures and $2 million from options. There was also a $2 million increase in the amortization from prior year losses. IMR amortization of losses decreased $33 million in 2007 primarily due to loss amortization on derivative forwards of $19 million, currency forwards of $11 million, and mortgage forwards of $7 million, partially offset by increased amortization of prior year losses of $4 million.

Fees and other income, which includes miscellaneous income, as well as commissions and expense allowances on reinsurance ceded, decreased $156 million in 2008. The decrease in fees and other income is primarily due to lower market valuations for guaranteed separate accounts, as MassMutual's income is based on actual investment performance. In 2008, actual investment performance fell below the guaranteed index rates for these separate accounts, requiring MassMutual to fund the shortfall.

Fees and other income increased $26 million in 2007 primarily due to increased asset based fees resulting from business growth.

Policyholders' benefits, which include supplementary contract payments, matured endowments, death, annuity, disability and surrender benefits, and interest and adjustments on contract or deposit-type contract funds, increased $468 million in 2008. The increase is primarily due to higher sponsor redemptions for defined benefit and contribution contracts and higher death benefits on whole life contracts.

Policyholders' benefits increased $377 million in 2007. The increase was primarily due to higher sponsor redemptions on defined benefit and defined contribution contracts, increased surrenders on fixed annuities and higher surrenders on corporate-owned life insurance (**"COLI"**) contracts.

The life insurance lapse rate, which is based on the amount of life insurance in force, was 5.0% in 2008 and 4.3% in 2007.

Change in policyholders' reserves, which includes transfers to and from separate accounts based upon policyholder elections, and the change in general account reserves, increased $828 million in 2008. The change in policyholders' reserves was primarily driven by additional reserve requirements of $659 million for variable annuity products with living benefit guarantees and increased premium levels, partially offset by an increase in benefits and surrenders.

Change in policyholders' reserves increased $78 million in 2007. The change in policyholders' reserves increased as growth in premium and interest credited on higher reserves was partially offset by unfavorable surrender activity.

General insurance expenses decreased $35 million in 2008 primarily due to the release of litigation reserves due to favorable settlements and a reduction in incentive compensation costs, partially offset by increased expenses for operational staffing in connection with business growth and strategic initiatives. Additionally, expenses were reduced by $15 million in 2007 due to reserve refinements for a one-time class action settlement agreement regarding alleged insurance sales practice claims (the "**Global Settlement**").

General insurance expenses decreased $27 million in 2007 as expenses were favorably impacted by a refinement of the Global Settlement accrual and lower pension costs resulting from higher returns on plan assets. Additionally, expenses were lower as costs related to the implementation of Sarbanes Oxley in 2006 did not recur. These items were partially offset by an increase in technology costs on strategic initiatives and increases for operational staffing and services.

Commissions, including commissions and expense allowances on reinsurance assumed, increased $12 million in 2008 and $10 million in 2007 primarily due to net business growth. Commissions do not necessarily correlate to total premium income since commission rates vary by product. Commission schedules are relatively greater for individual life and annuity products compared to retirement products, which do not generate significant commissions.

Dividends to policyholders decreased $41 million in 2008 due to a decrease in the dividend scale for 2009, partially offset by normal business growth. In 2007, dividends to policyholders increased $147 million due to an increase in the 2008 dividend scale and normal business growth.

Federal income taxes changed $387 million in 2008, from an expense of $119 million in 2007 to a tax benefit of $268 million in 2008, primarily due to lower statutory pretax earnings, net of the MMHLLC dividend, which reduced income tax expense by $358 million.

Federal income taxes changed $169 million in 2007, from a tax benefit of $50 million in 2006 to an expense of $119 million in 2007. The change was primarily driven by an increase in expenses related to IRS audit and appeals settlements of $105 million, temporary adjustments related to taxable investment income, primarily for pass through entities, which increased taxes by $57 million, and an increase in statutory pretax earnings which increased taxes by $38 million. These items were partially offset by greater tax benefits of $47 million in 2007 related to tax reserves released for previously established tax contingencies that have been resolved in our favor.

Net realized capital gains (losses) were comprised of the following:

	Years Ended December 31,				
	2008	2007	2006	% Change 08 vs. 07	% Change 07 vs. 06
	(In Millions)				
Realized capital gains (losses)					
Bonds	$ (765)	$ (452)	$ (29)	(69)%	NM
Preferred stocks	(44)	(19)	16	(132)	(219)%
Common stocks – subsidiaries and affiliates	(102)	4	18	NM	(78)
Common stocks– unaffiliated	(15)	107	183	(114)	(42)
Mortgage loans	4	(6)	21	167	(129)
Real estate	41	191	56	(79)	241
Partnerships and LLCs	(380)	(89)	56	(327)	(259)
Derivatives and other	238	(162)	(72)	247	(125)
Federal and state taxes	29	(45)	(51)	164	12
Net realized capital gains (losses) before deferral to the IMR	(994)	(471)	198	(111)	(338)
Net (gains) losses deferred to IMR	(361)	31	76	NM	(59)
Less taxes on net deferred (gains) losses	122	9	(26)	NM	135
Net after-tax (gains) losses deferred to IMR	(239)	40	50	(698)	(20)
Total net realized capital gains (losses)	**$(1,233)**	**$ (431)**	**$ 248**	**(186)%**	**(274)%**

NM = not meaningful or in excess of 900%

Net realized capital losses increased $802 million in 2008 primarily due to increased net losses on bonds of $313 million, partnerships and LLCs of $291 million and preferred stocks of $25 million, as well as decreased net gains on common stocks of $228 million and real estate of $150 million. Contributing to the increase in net realized capital losses was an increase in after-tax gains deferred to the IMR of $279 million. These changes were partially offset by a change from net losses of $162 million to net gains of $238 million on derivatives and other, a change from net losses of $6 million to net gains of $4 million on mortgage loans and a decrease in federal and state taxes of $74 million.

Net realized capital losses increased $679 million in 2007 primarily due to increased net losses on bonds of $423 million and derivatives and other of $90 million and decreased net gains on partnerships and LLCs of $145 million, common stocks of $90 million, preferred stocks of $35 million, and mortgage loans of $27 million. Contributing to the increase in net realized capital losses was a decrease in after-tax losses deferred to the IMR of $10 million. These changes were partially offset by increased net gains on real estate of $135 million and a decrease in federal and state taxes of $6 million.

The book values of investments are written down when a decline in value is considered to be other-than-temporary. Through December 31, 2008, we recognized $1,610 million of impairment losses compared to $679 million through December 31, 2007. Of the $1,610 million of other-than-temporary impairments, $1,018 million was related to bonds, $397 million to partnerships and LLCs, $103 million to common stock, $55 million to other, $36 million to preferred stock, and $1 million to mortgage loans. We employ a systematic methodology to evaluate other-than-temporary impairments. The methodology to evaluate declines in value utilizes a quantitative and qualitative process ensuring that available evidence concerning the declines is evaluated in a disciplined manner. Pursuant to confirmation from the Commonwealth of Massachusetts Division of Insurance, we began utilizing undiscounted cash flows to determine impairments for structured securities prospectively beginning with the quarter ended September 30, 2008. Prior to July 1, 2008, resulting cash flows were discounted at spreads consistent with the structured and loan-backed security market's weakness and uncertainty around the magnitude and timing of cash flows. This review process provided a framework for deriving other-than-temporary impairments in a manner consistent with market participant assumptions. In these analyses, credit quality of loan vintage, collateral type and investment structure were critical elements of determining other-than-temporary impairments. As a result of this change, our total assets, net income and surplus for the year ended December 31, 2008 were not reduced by approximately $275 million.

In January 2009, the NAIC issued Statement of Statutory Accounting Principles (**"SSAP"**) No. 98, "Treatment of Cash Flows When Quantifying Changes in Valuation and Impairments, and Amendment of SSAP No. 43 – Loan-backed and Structured Securities," which is effective for quarterly and annual reporting periods beginning on or after January 1, 2009. SSAP No. 98 requires that a structured or loaned-backed security that is other-than-temporarily impaired be written down to fair value and recognized in net realized capital gains (losses). The estimated impact on total assets, net income, and surplus of applying SSAP No. 98 as of December 31, 2008 of approximately $275 million resulting from residential mortgage-backed securities (**"RMBS")** and collateralized debt obligations (**"CDOs"**) as disclosed in the statutory financial statements represents management's best estimates and assumptions. The impact of applying SSAP No. 98 to other types of structured securities has not yet been determined, but may adversely impact the results of operations and financial condition.

Realized capital gains (losses) do not reflect the changes in AVR and other investment reserves, which are recorded as a change in surplus.

Bond net realized capital losses increased $313 million in 2008 primarily driven by a $514 million increase in other-than-temporary impairments primarily attributed to the widening of credit spreads, continuing decline in the credit markets, liquidity, bank loan values, and other uncertainties in current market values. Bond net realized capital losses increased $423 million in 2007 primarily driven by a $472 million increase in other-than-temporary impairments primarily attributed to the decline in value of the residential mortgage-backed securities.

Bond realized capital losses on sales and other-than-temporary impairments were comprised of the following:

	Years Ended December 31,				
	2008	**2007**	**2006**	**% Change 08 vs. 07**	**% Change 07 vs. 06**
		(In Millions)			
Gross realized capital gains on sales	$ 684	$ 95	$ 90	620%	6%
Gross realized capital losses on sales	(431)	(43)	(87)	NM	51
Other-than-temporary impairments	(1,018)	(504)	(32)	(102)	NM
Net realized capital losses	**$ (765)**	**$ (452)**	**$ (29)**	**(69)%**	**NM**

NM = not meaningful or in excess of 900%

Residential mortgage-backed securities

As of December 31, 2008, we had $10,028 million of RMBS bonds, including CDOs and other bonds with residential mortgage exposure, of which $5,401 million was prime, $3,109 million was Alt-A and $1,518 million was subprime. As of December 31, 2007, we had $12,286 million of RMBS, including CDOs and other bonds with residential mortgage exposure, of which $7,629 million was prime, $3,419 million was Alt-A and $1,238 million was subprime. The mortgage collateral classified as U.S. government agency is considered of lowest relative risk while those classified as subprime are of the highest relative risk. The Alt-A category includes option adjustable rate mortgages and the subprime category includes "scratch and dent" or reperforming pools, high loan-to-value pools and pools where the borrowers have very impaired credit but the average loan-to-value at origination is low, typically 70% or below. In identifying Alt-A and subprime exposure, management utilized a combination of qualitative and quantitative factors, including FICO scores and loan-to-value ratios.

Beginning in 2007, market conditions for Alt-A and subprime investments deteriorated due to higher delinquencies, reduced home prices and reduced refinancing opportunities. This market turbulence has spread to other credit markets. It is unclear how long it will take for a return to more liquid market conditions.

The actual cost, carrying value, fair value, and related gross realized losses from other-than-temporary impairments of our investments in bonds with significant Alt-A and subprime exposures were as follows:

	December 31, 2008			Year Ended December 31, 2008
	Actual Cost	Carrying Value	Fair Value	Other-Than-Temporary Impairments
		(In Millions)		
Alt-A:				
Residential mortgage-backed securities	$ 3,778	$ 3,027	$ 1,625	$ (579)
Collateralized debt obligations	88	82	82	(19)
Other bonds	-	-	-	-
Total Alt-A	**3,866**	**3,109**	**1,707**	**(598)**
Subprime:				
Residential mortgage-backed securities	1,779	1,517	1,139	(151)
Collateralized debt obligations	13	1	1	(4)
Total subprime	**1,792**	**1,518**	**1,140**	**(155)**
Total Alt-A and subprime	**$ 5,658**	**$ 4,627**	**$ 2,847**	**$ (753)**

	December 31, 2007			Year Ended December 31, 2007
	Actual Cost	Carrying Value	Fair Value	Other-Than-Temporary Impairments
		(In Millions)		
Alt-A:				
Residential mortgage-backed securities	$ 3,540	$ 3,346	$ 3,183	$ (205)
Collateralized debt obligations	112	21	17	(97)
Other bonds	52	52	52	-
Total Alt-A	**3,704**	**3,419**	**3,252**	**(302)**
Subprime:				
Residential mortgage-backed securities	1,356	1,237	1,183	(123)
Collateralized debt obligations	23	1	3	(23)
Total subprime	**1,379**	**1,238**	**1,186**	**(146)**
Total Alt-A and subprime	**$ 5,083**	**$ 4,657**	**$ 4,438**	**$ (448)**

Note: The actual cost in these tables is reduced by paydowns and other maturities.

The following tables show the percentage of statement value of Alt-A and subprime residential mortgage-backed securities by vintage (representing the year the pool of loans was originated) and credit ratings as of December 31, 2008 and 2007. *See* "Continuing Market Impact."

December 31, 2008

Year	AAA	AA	A	BBB	BB & Below	Total
2008	0.2%	-%	-%	-%	-%	0.2%
2007	5.9	1.3	0.1	0.7	1.7	9.7
2006	32.3	2.3	1.0	0.9	0.9	37.4
2005 & prior	39.9	10.2	1.3	0.9	0.4	52.7
Total	**78.3%**	**13.8%**	**2.4%**	**2.5%**	**3.0%**	**100.0%**

December 31, 2007

Year	AAA	AA	A	BBB	BB & Below	Total
2007	9.5%	1.0%	0.1%	0.2%	-%	10.8%
2006	37.8	1.2	0.2	0.8	0.4	40.4
2005 & prior	41.0	6.6	0.7	0.4	0.1	48.8
Total	**88.3%**	**8.8%**	**1.0%**	**1.4%**	**0.5%**	**100.0%**

Beginning in 2007, the slowing of the U.S. housing market, rising residential mortgage rates, and relaxed underwriting standards used by residential mortgage loan originators led to higher delinquency and loss rates, reduced credit availability and reduced liquidity in the residential loan market. We implemented a stringent review process for determining the nature and timing of other-than-temporary impairments on securities containing these risk characteristics. Cash flows were modeled for selected bonds deemed to be at risk for impairment using prepayment and default assumptions that varied according to collateral attributes. Bonds with nontrivial credit exposure were modeled across a variety of prepayment and default scenarios, spanning the range of possible outcomes specific to each individual security. Fair values resulting from internal models are those expected to be paid in an orderly transaction between willing market participants at the financial statement date.

Commercial mortgage-backed exposure

We hold certain bonds backed by pools of commercial mortgages. The mortgages in these pools have varying risk characteristics related to underlying collateral type, borrower's risk profile and ability to refinance, and the return provided to the borrower from the underlying collateral. These investments had actual cost of $3,422 million, fair value of $2,720 million and related gross realized losses from other-than-temporary impairments of $2 million as of December 31, 2008. These investments had actual cost of $3,334 million, fair value of $3,341 million and related gross realized losses from other-than-temporary impairments of $3 million as of December 31, 2007.

Leveraged loan exposure

The current liquidity crisis has also resulted in increased risks related to our investments in domestic and European leveraged loans. Leveraged loans are loans extended to companies or individuals that already have considerable amounts of debt. We hold leveraged loans as bonds with interest rates that are higher than typical loans that reflect the additional risk of default from issuers with high debt-to-equity ratios. European leveraged loans typically have speculative grade ratings. While default rates were low in 2007 and 2008, the weakening of world credit markets may have negative consequences in the future. In addition, the liquidity crisis continues to adversely affect lenders' underwriting appetite for new financing arrangements and hence could lead to a diminished ability to refinance the underlying collateral which could lead to increased defaults.

The actual cost, carrying value, fair value, and related gross realized losses from other-than-temporary impairments of our domestic and European leveraged loans were as follows:

	December 31, 2008			Year Ended December 31, 2008
	Actual Cost	Carrying Value	Fair Value	Other-Than-Temporary Impairments
	(In Millions)			
Domestic leveraged loans	$ 1,802	$ 1,728	$ 1,304	$ (56)
Domestic leveraged loan CDOs	929	881	447	(30)
Total domestic leveraged loans and CDOs	2,731	2,609	1,751	(86)
European leveraged loans	911	888	388	(51)
Total domestic and European leveraged loans and CDOs	**$ 3,642**	**$ 3,497**	**$ 2,139**	**$ (137)**

	December 31, 2007			Year Ended December 31, 2007
	Actual Cost	Carrying Value	Fair Value	Other-Than-Temporary Impairments
	(In Millions)			
Domestic leveraged loans	$ 2,085	$ 2,082	$ 2,029	$ (3)
Domestic leveraged loan CDOs	734	714	677	(17)
Total domestic leveraged loans and CDOs	2,819	2,796	2,706	(20)
European leveraged loans	986	1,046	1,013	-
Total domestic and European leveraged loans and CDOs	**$ 3,805**	**$ 3,842**	**$ 3,719**	**$ (20)**

Note: The actual cost in these tables is reduced by paydowns and other maturities.

Management's judgment regarding other-than-temporary impairments and estimated fair value, including the difficulty of obtaining readily determinable prices for RMBS, CMBS and other investments, including leveraged loan exposure, impacted by the current illiquid credit market environment, depends upon evolving conditions that can alter the anticipated cash flows realized by investors. Further deterioration of market conditions and related management judgments of other-than-temporary impairments and fair value could negatively impact our results of operations, surplus and the disclosed fair value.

Pursuant to confirmation from the Commonwealth of Massachusetts Division of Insurance, we began utilizing undiscounted cash flows to determine other-than-temporary impairments for structured securities, prospectively beginning with the quarter ended September 30, 2008. Internal inputs used in determining the amount of the other-than-temporary impairments on structured securities included collateral performance including prepayment speeds, default rates, and loss severity based on borrower and loan characteristics, as well as deal structure including subordination, over-collateralization and cash flow priority. Prior to July 1, 2008, resulting cash flows were discounted at spreads consistent with the residential mortgage market's weakness and the uncertainty around the magnitude and timing of cash flows. This review process provided a framework for deriving other-than-temporary impairments in a manner consistent with market participant assumptions. In these analyses, credit quality of loan vintage, collateral type and investment structure were critical elements of determining other-than-temporary impairments. As a result of this change, our total assets, net income and surplus for the year ended December 31, 2008 was not reduced by approximately $275 million.

The fair values of RMBS, commercial mortgage-backed securities (**"CMBS"**), and commercial mortgage loans are highly sensitive to evolving conditions that can impair the cash flows realized by investors. Determining fair value is made more difficult by the lack of observable prices, uncertainty of credit ratings, and the current liquidity crisis which may continue into the foreseeable future. The ultimate emergence of losses is subject to uncertainty. If defaults were to increase above the stresses imposed in our analysis or collateral performance was worse than expected, management would need to reassess whether such credit events have changed our assessment of other-than-temporary impairments and estimates of fair values given the underlying dynamics of the market and the expected performance of these assets. A significant, unexpected credit event could change management's view of these assets. The liquidity crisis continues to adversely affect lenders' underwriting appetite for new financing arrangements and hence could lead to a diminished ability to refinance the underlying collateral. Also, continued down turns in the economy and real estate market and increased unemployment will likely result in higher defaults and ultimately, increased recognition of other-than-temporary impairments.

In response to the deterioration of CDOs backed by residential mortgage-backed securities in 2008 and 2007, the trading markets for all CDO-related structured products have been adversely affected by reduced liquidity. We have investments in CDOs that are exposed primarily to the credit risk of corporate bank loans, corporate bonds or credit default swap contracts referencing corporate credit risk. Most of these structured investments are backed by corporate loans and are commonly known as Collateralized Loan Obligations. The portfolios backing these investments are actively managed and diversified by industry and individual issuer concentrations. Due to the nature of CDOs which complicate an evaluation of the underlying collateral, the overall negative economic environment and resulting reduced market liquidity, the risk premiums of CDOs have increased and resulted in declining prices. The steep decline in economic activity in the fourth quarter of 2008 will continue to affect the economic performance of the collateral pool of each CDO. Management believes its scenario analysis approach, based on actual collateral data and forward looking assumptions does capture the level of default risks in each pool including refinancing risks. However, in a rapidly changing economic environment, the risk in each collateral pool will be more volatile.

We have a review process for determining if CDO investments are at risk for other-than-temporary impairment. For the senior, mezzanine and junior debt tranches, cash flows are modeled using five (5) scenarios based on the current ratings and prices of the underlying corporate credit risks and incorporated prepayment and default assumptions that vary according to collateral attributes of each deal. The prepayment and default assumptions are varied within each model based upon rating (base case), historical expectations (default vector), rating change improvement (optimistic), rating change downgrade (pessimistic) and market price (market – implied). The default rates produced by these five (5) scenarios are assigned an expectation weight according to current market and economic conditions and fed into a sixth scenario. An other-than-temporary impairment is recorded if the aggregate undiscounted projected cash flows, in this sixth scenario, result in the default of any principal or interest payments due. For the most subordinated non-coupon bearing junior tranches (CDO equity tranches), the present value of the projected cash flows, in the sixth scenario, are measured using an 11% discount rate. If the current book value of the security is greater than the present value measured using an 11% discount rate, then the sum of the undiscounted cash flows are compared to the book value. If the undiscounted cash flows do not equal or exceed the book value of the security, then an other-than-temporary impairment is taken in an amount sufficient to adjust the book value to the sum of undiscounted cash flows. Certain CDOs cannot be modeled using all six scenarios because of limitations on the data needed for all scenarios. The cash flows for these CDOs, including foreign denominated CDOs, are projected using a customized scenario management believes is appropriate for the applicable collateral pool.

Preferred stocks net realized capital losses increased $25 million to $44 million in 2008 from $19 million in 2007. Losses in 2008 were primarily due to other-than-temporary impairments of $36 million. Preferred stock net realized capital losses increased $35 million to a loss of $19 million in 2007 from a gain of $16 million in 2006. Losses in 2007 were due to other-than-temporary impairments of $24 million.

Common stocks net realized capital gains decreased $228 million to a loss of $117 million in 2008 from a gain of $111 million in 2007, due to current year impairments of $103 million, net losses on sales of $9 million and foreign exchange losses of $5 million. Common stocks net realized capital gains decreased $90 million to a gain of $111 million in 2007 from a gain of $201 million in 2006. Contributing to the decrease in gains were other-than-temporary impairments of $38 million for the year ended December 31, 2007.

Mortgage loan net realized capital gains increased $10 million in 2008 to a gain of $4 million from a loss of $6 million in 2007. Mortgage loan net realized capital gains decreased $27 million in 2007 primarily driven by the $22 million write-off of a loan that was foreclosed.

Real estate net realized capital gains decreased $150 million to a gain of $41 million in 2008 from a gain of $191 million in 2007. Gains in 2008 were primarily due to a $38 million gain on the sale of a financial center. Real estate net realized capital gains increased $135 million to a gain of $191 million in 2007 from a gain of $56 million in 2006. Gains in 2007 were primarily due to $188 million of gains on three properties.

Partnership and LLCs net realized capital losses increased $291 million in 2008 primarily due to other-than-temporary impairments of $397 million. As of December 31, 2008, we did not hold any partnerships or LLCs with significant subprime exposure. For the year ended December 31, 2008, one partnership with significant Alt-A exposure held by us and liquidated prior to year end, Quantitative Enhanced Decisions Fund, had an actual cost of $78 million and related gross realized losses from current year other-than-temporary impairments of $43 million prior to liquidation.

Partnership and LLCs net realized capital gains decreased $145 million in 2007 primarily due to other-than-temporary impairments of $98 million. Included in other-than-temporary impairments is $63 million attributable to the continuing decline in credit markets. As of December 31, 2007, we held one partnership with significant subprime exposure, which had an actual cost of $55 million, fair value and carrying value of $13 million, and related gross realized losses from other-than-temporary impairments of $28 million. We held one partnership with significant Alt-A exposure, which had an actual cost of $78 million, carrying value and fair value of $45 million, and related gross realized losses from other-than-temporary impairments of $35 million.

Derivative and other net realized capital gains increased $400 million in 2008. Derivative instruments had realized gains of $300 million in 2008 compared to realized losses of $140 million in 2007. Current year gains included credit default swaps of $93 million, equity futures of $77 million, currency forwards of $66 million, interest rate swaps of $63 million, mortgage-backed security forwards of $28 million, futures of $25 million and equity options of $9 million which were partially offset by losses on currency swaps of $38 million and financial options of $24 million. In 2008, there was a $41 million increase in losses from other net realized capital gains (losses) which was primarily due to $55 million of other-than-temporary impairments.

In 2007, derivative and other net realized capital losses increased $90 million. Derivative instruments had realized losses of $140 million in 2007 compared to realized gains of $20 million in 2006. Decreased gains were primarily driven by currency swaps of $112 million and option contracts of $42 million. In 2007, there was a $70 million decrease in losses from other net realized capital gains (losses) which was primarily due to the 2006 maturity of a medium-term note which resulted in foreign currency exchange losses of $102 million.

Fluctuations in market conditions will impact future investment results.

The following table sets forth the net realized and unrealized capital losses (unrealized losses are charged directly to surplus) from derivatives:

	Years Ended December 31,				
	2008	2007	2006	% Change 08 vs. 07	% Change 07 vs. 06
		(In Millions)			
Net realized capital gains (losses)	$ 300	$ (140)	$ 20	314%	(800)%
Net unrealized capital gains (losses)	1,919	313	(348)	513	190
Net realized and unrealized capital gains (losses)	**$ 2,219**	**$ 173**	**$ (328)**	**NM**	**153%**

NM = not meaningful or in excess of 900%

For 2008, $239 million of net after-tax gains were deferred into the IMR including bonds, preferred stocks, and short-term investments of $163 million, derivatives of $68 million, and mortgage loans of $8 million. For 2007, $40 million of net after-tax losses were deferred into the IMR from derivatives of $70 million which were partially offset by bonds, preferred stocks, and short-term investments of $20 million and mortgage loans of $10 million. Gains and losses deferred to the IMR are amortized into income over the estimated life of the investment sold. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations- Investments.”

Statement of Financial Position

The following table sets forth MassMutual's assets, liabilities and surplus, for the dates presented:

	December 31, 2008	December 31, 2007	% Change 08 vs. 07
	(In Millions)		
Assets:			
Bonds	$ 45,165	$ 40,211	12%
Preferred stocks	126	152	(17)
Common stocks – subsidiaries and affiliates	2,200	3,384	(35)
Common stocks – unaffiliated	265	765	(65)
Mortgage loans	11,876	11,402	4
Policy loans	8,885	8,304	7
Real estate	1,085	1,176	(8)
Partnerships and limited liability companies	5,220	4,875	7
Derivatives and other invested assets	3,616	1,453	149
Cash, cash equivalents and short-term investments	2,621	2,558	2
Total invested assets	81,059	74,280	9
Investment income due and accrued	690	717	(4)
Federal income taxes	220	-	NM
Deferred income taxes	512	549	(7)
Other than invested assets	864	831	4
Total assets excluding separate accounts	83,345	76,377	9
Separate account assets	30,949	42,709	(28)
Total assets	**$ 114,294**	**$ 119,086**	**(4) %**
Liabilities and surplus:			
Policyholders' reserves	$ 60,570	$ 56,822	7%
Liabilities for deposit–type contracts	3,921	4,257	(8)
Contract claims and other benefits	258	242	7
Policyholders' dividends	1,355	1,391	(3)
General expenses due or accrued	768	715	7
Federal income taxes	-	82	(100)
Asset valuation reserve	395	1,515	(74)
Securities sold under agreements to repurchase	3,414	2,051	66
Commercial paper	250	250	-
Derivative collateral	2,903	556	422
Other liabilities	1,145	668	71
Total liabilities excluding separate accounts	74,979	68,549	9
Separate account liabilities	30,852	42,529	(27)
Total liabilities	105,831	111,078	(5)
Surplus	8,463	8,008	6
Total liabilities and surplus	**$ 114,294**	**$ 119,086**	**(4) %**

NM = not meaningful or in excess of 900%

Assets

Total assets decreased $4.8 billion in 2008 as an increase in general account assets of $7.0 billion was more than offset by a decrease in separate account assets of $11.8 billion. The major components of the growth in general account assets were increases in bonds of $5.0 billion and derivatives and other invested assets of $2.2 billion.

Total invested assets increased by $6.8 billion, or 9% in 2008, driven primarily by cash flows associated with the net increase in policyholders' reserves, securities sold under agreements to repurchase, derivative collateral, other liabilities and surplus.

Bonds increased $5.0 billion, or 12% in 2008, including $17.6 billion of purchases and $762 million from taking possession of securities sold under agreements to repurchase collateral when the agreements were terminated, which were offset by $12.2 billion of sales and maturities. Also offsetting purchases were other-than-temporary impairments of $1.0 billion mostly attributed to residential mortgage-backed securities whose valuations suffered from the widening of credit spreads and the continuing decline in the credit markets. Bonds in NAIC Classes 1 and 2 (including exempt) were 51% of total general account invested assets as of December 31, 2008 and 49% as of December 31, 2007. The percentage of total invested assets representing bond investments in NAIC Classes 3 through 6 was 5% as of December 31, 2008 and 2007. See "Investments" for more discussion of NAIC investment classes.

Preferred stocks decreased $26 million, or 17% in 2008, including $36 million of other-than-temporary impairments and $7 million of net realized losses on sales which were partially offset by $17 million of net acquisitions.

Common stocks - subsidiaries and affiliates decreased $1.2 billion, or 35% in 2008, consisting of a $943 million decrease in market values primarily due to payment of $653 million in dividends from MMHLLC, a $342 million repatriation of seed money, and $69 million in other-than-temporary impairments, which were partially offset by a $100 million increase in the value of domestic life subsidiaries.

Common stocks – unaffiliated decreased $500 million, or 65%, primarily due to a $258 million decrease in the balance of net unrealized gains, $234 million of net dispositions and $34 million of other-than-temporary impairments.

Mortgage loans increased $474 million, or 4%, in 2008 including $1.8 billion of new investments, rollovers and additional funding which were partially offset by $1.1 billion of paydowns, full payoffs and sales. Net investments acquired were partially offset by unrealized losses of $178 million due to foreign exchange losses of $120 million and valuation allowances of $58 million. We do not originate any residential mortgages but invest in residential mortgage loan pools which may contain mortgages of subprime credit quality. As of December 31, 2008, we had no direct subprime exposure through the origination of residential mortgage loans or purchases of unsecuritized whole-loan pools. We purchase seasoned loan pools, most of which are Federal Housing Authority (**"FHA")** insured or Veterans' Administration (**"VA"**) guaranteed. As of December 31, 2008, we had mortgages with residential mortgage-backed exposure with a carrying value of $2,607 million which were FHA insured or VA guaranteed.

Policy loans increased $581 million, or 7%, in 2008 due to normal growth.

Real estate decreased $91 million, or 8%, in 2008 including $111 million of sales and dispositions, $89 million of depreciation and an increase in encumbrances of $24 million, which were partially offset by $71 million of capital improvements, $53 million of acquisitions and a $10 million reserve reduction. As of December 31, 2008, hotels and commercial office buildings remaining in the general account represented 51% and 45%, respectively, of our real estate portfolio compared to 49% and 44% for the same property types as of December 31, 2007. We believe that investing in hotels and commercial office buildings leverages our expertise in this field.

Partnerships and LLCs increased $345 million, or 7%, in 2008 including net contributions of $1.0 billion offset by a $416 million decrease due to undistributed losses. Contributing to the losses were $397 million of other-than-temporary impairments. Additional undistributed losses of $374 million were not recorded because the equity method of accounting is suspended when the book value equals zero, as in most cases, book value cannot be negative. We are not obligated to and do not intend to fund the losses. As of December 31, 2008, we did not hold any partnerships or LLCs with significant subprime exposure. For the year ended December 31, 2008, one partnership held by MassMutual had significant Alt-A exposure and was liquidated prior to year end. This partnership had an actual cost of $78 million and related gross realized losses from current year other-than-temporary impairments of $43 million prior to liquidation.

Derivatives and other invested assets increased $2.2 billion, or 149%, in 2008 due to $2.2 billion of mark-to-market increases in fair value which were partially offset by a $26 million decrease in the cost of financial options and a $19 million decrease in receivables for securities sold. Mark-to-market increases included interest rate swaps of $1.2 billion, financial options of $859 million, currency swaps of $58 million, credit default swaps of $55 million, mortgage-backed security forwards of $10 million and equity options of $8 million.

We use derivative financial instruments in the normal course of business to manage risks, primarily to reduce interest rate and duration imbalances determined in asset/liability analyses. We also use a combination of derivatives and fixed income investments to create synthetic investment positions. These combined investments are created opportunistically when they are economically more attractive than the replicated instruments or when the replicated instruments are unavailable. These combinations are considered replicated asset transactions as defined under statutory accounting principles.

Cash, cash equivalents and short-term investments increased $63 million, or 2%, in 2008. Cash and cash equivalents increased $497 million due to a $419 million increase in cash equivalents and a $78 million increase in cash. The increase in cash equivalents was due to the sale of longer-term investments, increased derivative collateral and dividends received from MMHLLC. Short-term investments decreased $433 million primarily due to a $1.2 billion decrease in securities purchased under agreements to resell, as all agreements with affiliated funds were terminated. The decrease was partially offset by $680 million in money market funds which are awaiting longer-term investment opportunities and an increase of $38 million in short-term bonds with maturities of ninety (90) days or greater.

Federal income taxes increased $302 million, to a recoverable amount of $220 million in 2008 from a payable amount of $82 million in 2007, primarily due to the current tax benefit of $292 million.

Deferred income taxes decreased $37 million in 2008, primarily due to lower future tax deductions related to the Global Settlement and employment related reserves, partially offset by higher future tax deductions related to investment items.

Other than invested assets consists primarily of premiums and considerations due, deferred and uncollected, amounts receivable from reinsurance, amounts due from subsidiaries and affiliates, guaranty funds on deposit and electronic data processing equipment. Other than invested assets increased $33 million in 2008, primarily due to an increase in premium considerations due, deferred and uncollected.

Separate account assets decreased $11.8 billion primarily due to market value depreciation of $11.5 billion, negative net cash flows of $73 million and net seed money distributions of $143 million. Seed money represents investments transferred between the general account and the separate account, frequently used to launch new separate accounts.

Liabilities

Total liabilities decreased $5.2 billion in 2008 primarily due to decreases in separate account liabilities of $11.7 billion and the asset valuation reserve (**"AVR"**) of $1.1 billion, partially offset by increases in policyholders' reserves of $3.7 billion, derivative collateral of $2.3 billion and securities sold under agreements to repurchase of $1.4 billion.

The increase in policyholders' reserves of $3.7 billion is primarily due to an increase in whole life, group life, universal life and annuity reserves reflecting net growth of the in-force block as well as growth from current year sales. Additionally, the increase in policyholders' reserves reflects additional reserve requirements for products with secondary guarantees, primarily related to variable annuity contracts with living benefit guarantees.

As a result of the precipitous drop in the U.S. stock markets this year, the net amounts at risk associated with variable annuity guarantees increased significantly from December 31, 2007 to December 31, 2008. These variable annuity guarantees are in the form of guaranteed minimum death benefits (**"GMDB"**), guaranteed minimum income benefits (**"GMIB"**), guaranteed minimum accumulation benefits (**"GMAB"**) and guaranteed minimum withdrawal benefits (**"GMWB"**).

The following table summarizes the account values, net amount at risk and weighted average attained age for variable annuity contracts with GMDB, GMAB, GMIB and GMWB classified as policyholders' reserves and separate account liabilities. The net amount at risk is defined as the minimum guarantee less the account value calculated on a policy-by-policy basis, but not less than zero.

	December 31, 2008			December 31, 2007		
	Account Value	Net Amount at Risk	Weighted Average Attained Age	Account Value	Net Amount at Risk	Weighted Average Attained Age
	($ In Millions)					
GMDB	$6,112	$1,484	60	$7,697	$ 46	59
GMIB	2,524	1,023	60	2,135	31	60
GMAB	687	217	58	1,000	2	57
GMWB	78	21	65	-	-	-

A cash flow testing reserve of $659 million was established on December 31, 2008, to satisfy asset adequacy analysis requirements for the living benefits.

Liabilities for deposit-type contracts decreased $336 million in 2008 primarily due to maturities for medium-term note ("**MTN**") contracts backed by funding agreements, which more than offset $650 million of MTN sales.

The liability for policyholders' dividends decreased $36 million in 2008 primarily due to a decrease in the 2009 dividend scale which more than offset normal durational growth.

General expenses due or accrued increased $53 million in 2008. The increase was primarily due to an increase in the minimum pension liability driven by declines in the market value of pension plan assets, largely offset by claim payments for the Global Settlement, a release of litigation reserves and lower incentive compensation accruals.

AVR decreased $1.1 billion, or 74%, in 2008. Decreases included $539 million in the common stock reserve which was primarily due to net unrealized losses of $931 million, net realized losses of $110 million, including $103 million of other-than-temporary impairments, and a 41% decrease in statement values, partially offset by $502 million of reserve contributions. Also included was a $387 million decrease in the real estate and other invested assets reserve, primarily due to net realized losses of $322 million, net unrealized losses of $182 million, and an 8% decrease in statement values. There was also a $131 million decrease in the bonds, preferred stock, short-term investments, and derivatives reserve, primarily due to other-than-temporary impairments on bonds of $1,018 million and preferred stocks of $36 million which were partially offset by a $533 million reserve contribution. In addition, a $63 million decrease in the mortgage loan reserve was primarily due to net unrealized losses of $138 million which was partially offset by a 4% increase in statement values. The AVR is a formula driven reserve whose purpose is to reduce the surplus volatility of after-tax credit-related realized and unrealized gains and losses. It is calculated based on statement values by asset type, credit quality and reserve factors. The reserve can range from zero to a maximum allowable reserve. Any amounts calculated in excess of the maximum reserve will not be included. Any losses that exceed their related component of AVR will not be absorbed by this reserve. Changes in statement values, credit quality, and capital gains or losses will affect the reserve balance. Impairment losses of $350 million were unable to be absorbed by the common stock component and $277 million were unable to be absorbed by the bond component.

The liability for securities sold under agreements to repurchase increased $1.4 billion, or 66%, in 2008. These agreements have been a favored means of financing higher yielding investments as MassMutual reinvests the proceeds at a return in excess of its borrowing cost or funds other short-term cash requirements. Currently, securities sold under agreements to repurchase are favored over securities lending due to higher returns.

Derivative collateral increased $2.3 billion, to $2.9 billion as of December 31, 2008 from $556 million as of December 31, 2007. The increase in derivative collateral is due to an increase in collateral on margin calls to swap counterparties because of the increased value of our derivative contracts.

Other liabilities consist primarily of derivative payables, payables for securities, unearned investment income and transfers to separate accounts due or accrued. Other liabilities increased $477 million in 2008 primarily due to a $275 million increase in derivative payables due to counterparties under open contracts and a $209 million increase for transfers to separate accounts.

Surplus

Surplus increased $455 million in 2008 to $8.5 billion as of December 31, 2008. The increase was primarily due to a decrease in the asset valuation reserve of $1.1 billion, a decrease in nonadmitted assets of $365 million and the change in net deferred income taxes of $278 million, partially offset by a net loss of $993 million and an increase in the minimum pension liability of $343 million.

Liquidity and Capital Resources

Liquidity

We manage our liquidity position by matching our exposure to cash demands with adequate sources of cash and other liquid assets. Our principal sources of liquidity are operating cash flows and holdings of cash, cash equivalents and other readily marketable assets. Historically, we have consistently experienced net positive cash flows from operations. Our primary cash flow sources include investment income, principal repayments on invested assets, life insurance premium, annuity premium and deposits and financial product deposits.

Cash, cash equivalents and short-term investments increased $63 million, or 2%, during 2008. Cash and cash equivalents increased $497 million due to a $419 million increase in cash equivalents and a $78 million increase in cash. The increase in cash equivalents was due to the sale of longer-term investments, increased derivative collateral and dividends received from MMHLLC. Short-term investments decreased $433 million primarily due to a $1.2 billion decrease in securities purchased under agreements to resell, as all agreements with affiliated funds were unwound. The decrease was partially offset by $680 million in money market funds which are awaiting longer-term investment opportunities and an increase of $38 million in short-term bonds with maturities of ninety (90) days or greater. Rather than increase our credit risk, we use a combination of derivatives and short-term investments to economically create temporary investment positions, which are highly liquid and of high quality. These investments are created opportunistically when they are economically more attractive than other investments and are held to improve the quality and performance of the general account until other suitable investments become available.

Net cash provided from operations increased $728 million, or 26%, to $3.5 billion in 2008. The increase was largely attributable to a decrease of $1.2 billion in net transfers to separate accounts as market volatility made separate accounts less favorable, primarily for group annuity and BOLI contracts, as well as an increase of $265 million in premium and other income collected, an increase of $196 million in net investment income and a decrease of $195 million in federal and foreign income taxes paid, partially offset by increases of $517 million in commissions and other expenses, $490 million in benefit payments and $140 million in dividends paid to policyholders.

Net cash provided from operations increased $387 million, or 16%, to $2.7 billion in 2007. The increase was attributable to an increase of $724 million in net investment income, an increase of $399 million in premium and other income collected and a decrease of $87 million in net transfers to separate accounts, partially offset by increases of $393 million in benefit payments, $211 million in federal and foreign income tax payments, $145 million in commissions and other expenses and $74 million in dividends paid to policyholders.

Net cash from investments remained an outflow in 2008, $6.8 billion compared to $2.6 billion in 2007. Purchases of investments and the net increase in policy loans were $26.2 billion in 2008 while sales and maturities of investments and receipts from repayments of loans were $19.4 billion. In 2007, purchases of investments and the net increase in policy loans were $21.1 billion while sales and maturities of investments and receipts from repayments of loans were $18.5 billion.

Net cash from financing activities and other sources increased $1.6 billion in 2008, primarily due to a $2.1 billion increase in the change in derivative collateral and a $495 million increase in net securities sold under agreements to repurchase, partially offset by an increase of $883 million in net withdrawals on deposit-type contracts.

Net cash from financing activities and other sources increased $1.7 billion in 2007, primarily due to a $1.5 billion increase in net deposits on deposit-type contracts and the issuance of commercial paper of $249 million.

Our investment portfolio is structured to ensure a strong liquidity position in order to permit timely payment of policy and contract benefits without requiring an uneconomic sale of assets. In general, liquid assets include cash and equivalents, public bonds, unaffiliated preferred stock, and unaffiliated public common stock, all of which generally have ready markets with large numbers of buyers. The statement value of these assets as of December 31, 2008 was approximately $34.4 billion. While the investment portfolio does contain assets (primarily mortgage loans, real estate, other invested assets, private bonds, affiliated common stock and affiliated preferred stock) which are generally considered illiquid for liquidity monitoring purposes, there is some ability to raise cash from these assets if needed.

We utilize sophisticated asset/liability analysis techniques in the management of the investments supporting our liabilities. Additionally, we test the adequacy of the projected cash flows provided by assets to meet all of our future policyholder and other obligations. We perform these studies using stress tests regarding future credit and other asset losses, market interest rate fluctuations, claim losses and other considerations. The result provides a picture of the adequacy of the underlying assets, reserves and capital. We analyze a variety of scenarios modeling potential demands on liquidity taking into account the provisions of policies and contracts in force, our cash flow position, and the volume of cash and readily marketable securities in our portfolio. We proactively manage our liquidity position on an ongoing basis to meet cash needs while minimizing adverse impacts on investment returns.

In most scenarios that we have tested, operating cash flow is more than sufficient to satisfy our obligations. Even in the most extreme scenarios tested, obligations can be met through cash flow and the sale of some of our liquid assets. These stress test scenarios assume no new business that would result in immediate positive cash flow. In addition, if we were in a stress situation, some uses of cash could be suspended, including new investments in illiquid instruments.

Institutional Investment Product Contract Terms

Guaranteed investment contracts (**"GICs"**) are pension plan investment contracts that pay a specified interest rate on contributions and pay book value at a specified maturity date. Contributions and withdrawals are largely fixed at the time of sale. We made a strategic decision to exit this market in 2006. As of December 31, 2008, GIC account balances totaled $325 million, which included $25 million in contracts that can be surrendered voluntarily with a market-value adjustment.

Funding agreements are investment contracts sold to domestic and international institutional investors. The terms of the funding agreements do not give the holder the right to terminate the contract prior to the contractually stated maturity date. No funding agreements have been issued with put provisions or ratings-sensitive triggers. Currency swaps are employed to eliminate foreign exchange risk from all funding agreements issued to back non-U.S. dollar denominated notes. Assets received for funding agreements may be invested in either our general account or in a separate account. As of December 31, 2008 and 2007, respectively, general account funding agreement balances totaled $2,632 million and $2,999 million, consisting of $2,595 million and $2,953 million in note programs and $37 million and $46 million in various other agreements.

Under most of our funding agreement programs, we create an investment vehicle or trust for the purpose of issuing medium-term notes to investors. Proceeds from the sale of the medium-term notes issued by these unconsolidated affiliates are used to purchase funding agreements from us. The payment terms of any particular series of notes are matched by the payment terms of the funding agreement securing the series. Notes were issued from our $2 billion European Medium-Term Note Program, now in run-off, and are now issued from our $8 billion Global Medium-Term Note Program.

As of December 31, 2008, the maturity schedule for general investment account contract liabilities was as follows:

	Funding Agreements	GICs (In Millions)	Total
2009	$ 1,445	$ 294	$ 1,739
2010	506	6	512
2011	3	25	28
2012	10	-	10
2013	318	-	318
Thereafter	350	-	350
Total	**$ 2,632**	**$ 325**	**$ 2,957**

Dividends from Subsidiaries

We do not rely on dividends from our subsidiaries to meet our operating cash flow requirements. Dividend payments from insurance subsidiaries are generally subject to certain restrictions imposed by statutory authorities. Additionally, dividend payments from other subsidiaries are limited to their retained earnings.

For C.M. Life Insurance Company, substantially all of the statutory shareholder's equity of approximately $708 million as of December 31, 2008 is subject to dividend restrictions. Dividend restrictions, imposed by various state regulations, limit the payment of dividends to us without the prior approval from the insurance department of the particular insurance subsidiary's state of domicile.

Our wholly owned subsidiary, MassMutual Holding, LLC (**"MMHLLC"**), is the parent of subsidiaries which include retail and institutional asset management, registered broker dealers, and international life and annuity operations.

Distributions by MMHLLC are recorded in net investment income and are limited to our equity in MMHLLC. Distributions were $653 million in 2008 and $350 million in 2007.

For foreign insurance subsidiaries, the most significant insurance regulatory jurisdictions include Japan, Taiwan and Hong Kong. Historically, we have reinvested a substantial portion of our unrestricted earnings in these operations.

Capital Resources

As of December 31, 2008 and 2007, our total adjusted capital, as defined by the NAIC, was $9.5 billion and $10.3 billion, respectively. The NAIC has a Risk Based Capital (**"RBC"**) model to compare total adjusted capital with a standard design in order to reflect an insurance company's risk profile. Although we believe that there is no single appropriate means of measuring capital needs, we feel that the NAIC approach to RBC measurement is reasonable, and we manage our capital position with significant attention to maintaining adequate total adjusted capital relative to RBC. Our total adjusted capital was well in excess of all RBC standards as of December 31, 2008 and 2007. We believe that we enjoy a strong capital position in light of our risks and that we are well positioned to meet policyholder and other obligations.

Investments

General

As directed by our policyholders, approximately 27% of our assets as of December 31, 2008 are separate account assets. Separate account assets consist principally of marketable securities reported at fair value and are not available to satisfy liabilities that arise from any of our other businesses. The following discussion focuses on the general investment account portfolio, which does not include our separate account assets.

As of December 31, 2008, we had $81.1 billion of invested assets in our general account, an increase of $6.8 billion from $74.3 billion. We manage the portfolio of invested assets to support the general account liabilities in light of liability characteristics and yield, liquidity and diversification considerations.

The following table sets forth our invested assets in the general account as of the dates indicated.

	December 31,			
	2008		2007	
	Carrying Value	% of Total	Carrying Value	% of Total
	($ In Millions)			
Bonds	$ 45,165	56%	$ 40,211	54%
Preferred stocks	126	-	152	-
Common stocks – subsidiaries and affiliates	2,200	3	3,384	5
Common stocks – unaffiliated	265	1	765	1
Mortgage loans	11,876	15	11,402	15
Policy loans	8,885	11	8,304	11
Real estate	1,085	1	1,176	2
Partnerships and LLCs	5,220	6	4,875	7
Derivatives and other invested assets	3,616	4	1,453	2
Cash, cash equivalents and short-term investments	2,621	3	2,558	3
Total investments	**$ 81,059**	**100%**	**$ 74,280**	**100%**

The following table is a management view of the general account's earnings yields by asset type.

	December 31,	
	2008	2007
Long and short-term bonds	5.8%	6.3%
Common and preferred stock	1.2	3.2
Mortgage loans	6.2	6.8
Policy loans	7.8	7.6
Real estate	4.7	4.4
Partnerships and LLCs	5.7	10.6
Derivatives	NM	NM
Total Portfolio	**6.0%**	**6.4%**

NM = not meaningful or in excess of 900%

Bonds, Cash Equivalents and Short-Term Investments

Bonds consist primarily of government backed securities and high quality marketable corporate debt securities. We invest a significant portion of our investment funds in high quality publicly traded bonds in order to maintain and manage liquidity and reduce the risk of default in the portfolio.

The NAIC Securities Valuation Office (**"SVO"**) rates investment credit risk based upon the issuer's credit profile. NAIC rating designations range from 1 to 6. A NAIC designation of 1 denotes obligations of the highest quality in which credit risk is at its lowest and the issuer's credit profile is stable; whereas a NAIC designation of 6 is assigned to obligations that are in or near default. Classes 1 and 2 are investment grade, Class 3 is medium quality and Classes 4, 5 and 6 are non-investment grade.

The following tables set forth the SVO ratings for our portfolio along with what we believe are the equivalent rating agency designations. Our presentation consists of long-term bonds, short-term securities and cash equivalents. The tables below also set forth the NAIC SVO ratings for our publicly traded and privately placed portfolios:

Total Portfolio Credit Quality

		December 31,			
		2008		2007	
NAIC Classes	Rating Agency Equivalent Designation	Carrying Value	% of Total	Carrying Value	% of Total
		($ In Millions)			
1	Aaa/Aa/A	$ 33,113	70%	$ 29,118	68%
2	Baa	10,804	23	9,859	23
3	Ba	1,505	3	1,601	4
4	B	1,438	3	1,640	4
5	Caa and lower	520	1	363	1
6	In or near default	194	-	63	-
	Total	**$ 47,574**	**100%**	**$ 42,644**	**100%**

Publicly Traded Credit Quality

		December 31,			
		2008		2007	
NAIC Classes	Rating Agency Equivalent Designation	Carrying Value	% of Total	Carrying Value	% of Total
		($ In Millions)			
1	Aaa/Aa/A	$ 27,016	84%	$ 22,503	83%
2	Baa	4,342	13	3,860	14
3	Ba	418	1	432	2
4	B	167	1	125	1
5	Caa and lower	170	1	92	-
6	In or near default	74	-	31	-
	Total	**$ 32,187**	**100%**	**$ 27,043**	**100%**

Privately Placed Credit Quality

NAIC Classes	Rating Agency Equivalent Designation	December 31, 2008 Carrying Value	2008 % of Total	2007 Carrying Value	2007 % of Total
		($ In Millions)			
1	Aaa/Aa/A	$ 6,097	40%	$ 6,615	42%
2	Baa	6,462	42	5,999	39
3	Ba	1,087	7	1,169	7
4	B	1,271	8	1,515	10
5	Caa and lower	350	2	271	2
6	In or near default	120	1	32	-
	Total	**$ 15,387**	**100%**	**$ 15,601**	**100%**

We utilize our investments in the privately placed portfolio to enhance the value of the overall portfolio, increase diversification, and obtain higher yields than can be earned by investing in public market securities of comparable quality. To control risk when utilizing privately placed securities, we rely upon broader access to management information, stronger negotiated protective covenants, call protection features, and a higher level of collateralization than can customarily be achieved in the public market.

The strength of the privately placed portfolio is demonstrated by the predominance of NAIC Class 1 and 2 securities.

The following table sets forth, by industry category, the total bond portfolio, including short-term securities and cash equivalents, as of December 31, 2008:

Portfolio by Industry
December 31, 2008

Industry Category	Public Carrying Value	Public % of Total	Private Carrying Value	Private % of Total	Total Carrying Value	Total % of Total
			($ In Millions)			
Mortgage-backed securities	$ 11,534	36%	$ 464	3%	$ 11,998	25%
Government	10,167	31	44	-	10,211	21
Finance	1,280	4	4,731	31	6,011	13
Asset-backed securities	1,605	5	2,209	14	3,814	8
Utilities	1,412	4	1,337	9	2,749	6
Consumer services	610	2	2,004	13	2,614	6
Cash equiv. and short-term inv.	2,410	7	-	-	2,410	5
Capital goods	855	3	1,383	9	2,238	5
Natural resources	747	2	988	6	1,735	4
Media	329	1	341	2	670	1
Healthcare	239	1	387	3	626	1
Transportation	210	1	392	3	602	1
Technology	219	1	360	2	579	1
Consumer goods	195	1	338	2	533	1
Retail	168	-	246	2	414	1
Telecommunications	189	1	154	1	343	1
Conglomerates	18	-	9	-	27	-
Total	**$32,187**	**100%**	**$15,387**	**100%**	**$47,574**	**100%**

Mortgage-backed securities consist mainly of residential mortgage-backed securities and collateralized mortgage obligations (both primarily government-backed or government agency-backed) as well as commercial mortgage-backed securities of generally high quality, which are supported by well-diversified collateral. We do not originate any residential mortgages but invest in residential mortgage loan pools which may contain mortgages of subprime credit quality.

With the exception of U.S. government securities, only one other industry group, finance, exceeds 10% of the total bond portfolio. The finance industry group holdings are very diversified and include a number of issues, which are effectively supported by large pools of assets that are themselves diversified by industry and issuer.

Bond Portfolio Surveillance and Under-Performing Investments

Generally, bonds are valued at amortized cost using the constant yield interest method. Bond transactions are recorded on a trade date basis, except for private placement bonds which are recorded on the funding date.

For fixed income securities that do not have a fixed schedule of payments, such as asset-backed, mortgage-backed and structured securities, the effect on amortization or accretion is revalued quarterly based on the current estimated cash flows, using either the prospective or retrospective adjustment methodologies, consistently applied by type of security. Certain high quality fixed income securities follow the retrospective method of accounting. Under the retrospective method, the recalculated effective yield equates the present value of the actual and anticipated cash flows, including new prepayment assumptions, to the original cost of the investment. Prepayment assumptions are based on borrower constraints and economic incentives such as the original term, age and coupon of the loan as affected by the interest rate environment. The current carrying value is then increased or decreased to the amount that would have resulted had the revised yield been applied since inception, and investment income is correspondingly decreased or increased. We have elected to use the book value as of January 1, 1994 as the cost for applying the retrospective adjustment method to securities purchased prior to that date. All other fixed securities, such as floating rate bonds and interest only securities, follow the prospective method of accounting. Under the prospective method, the recalculated future effective yield equates the carrying value of the investment to the present value of the anticipated future cash flows.

The fair value of bonds is based on values provided by the NAIC's SVO when available. If SVO values are not available, quoted market values provided by other third-party organizations are used. If quoted market values are unavailable, fair value is estimated using internal models by discounting expected future cash flows using current market rates applicable to yield, credit quality and maturity of the investment or using quoted market values for comparable investments. Internal inputs used in the determination of fair value include estimates of prepayment speeds, default rates, discount rates and collateral values, among others. Structure characteristics and results of cash flow priority are also considered. Fair values resulting from internal models are those expected to be paid in an orderly transaction between willing market participants at the financial statement date.

To identify under-performing investments, we employ a systematic methodology to evaluate other-than-temporary impairments by conducting a quarterly management review of all bonds including those in default, not-in-good standing, or valued below 80% of cost. We consider the following factors in the evaluation of whether a non-interest related decline in value is other-than-temporary: (a) the financial condition and near-term prospects of the issuer; (b) the likelihood that we will be able to collect all amounts due according to the contractual terms of the debt security in effect at the date of acquisition or expected cash flow for a structured security; (c) our ability and intent to hold the investment for a period of time sufficient to allow for an anticipated recovery in value; and (d) the period and degree to which the market value has been below cost. We consider the following factors in the evaluation of whether an interest related decline in value is other-than-temporary: (a) our near-term intent to sell; (b) our contractual and regulatory obligations; and (c) our ability and intent not to sell the investment until anticipated recovery of the cost of the investment. We also consider other qualitative and quantitative factors in determining the existence of other-than-temporary impairments including, but not limited to, unrealized loss trend analysis and significant short-term changes in value. If the impairment is other-than-temporary, a direct write-down to fair value or, for structured securities including residential mortgage-backed securities (**“RMBS”**) after July 1, 2008, to a value determined using undiscounted cash flows is recognized in realized capital losses and a new cost basis is established.

We have a review process for determining if Collateralized Debt Obligation (**“CDO”**) investments are at risk for other-than-temporary impairment. For the senior, mezzanine and junior debt tranches, cash flows are modeled using five scenarios based on the current ratings and prices of the underlying corporate credit risks and incorporated prepayment and default assumptions that vary according to collateral attributes of each deal. The prepayment and default assumptions are varied within each model based upon rating (base case), historical expectations (default vector), rating change improvement (optimistic), rating change downgrade (pessimistic), and market price (market – implied). The default rates produced by these five scenarios are assigned an expectation weight according to current market and economic conditions and fed into a sixth scenario. An other-than-temporary impairment is recorded if the aggregate undiscounted projected cash flows in this sixth scenario result in the default of any principal or interest payments due. For the most subordinated non-coupon bearing junior tranches (CDO equity tranches), the present value of the projected cash flows, in the sixth scenario are measured using an 11% discount rate. If the current book value of the security is greater than the present value measured using an 11% discount rate, then the sum of the undiscounted cash flows are compared to the book value. If the undiscounted cash flows do not equal or exceed the book value of the security, then an other-than-temporary impairment is taken in an amount sufficient to adjust the book value to the sum of undiscounted cash flows. Certain CDOs cannot be modeled using all six scenarios, because of limitations on the data needed for all scenarios. The cash flows for these CDOs, including foreign denominated CDOs, are projected using a customized scenario management believes is appropriate for the applicable collateral pool.

Asset-backed securities, including RMBS and commercial mortgage-backed securities (**“CMBS”**), are evaluated for other-than-temporary impairment on a periodic basis using scenarios customized by collateral type. We perform sensitivity analysis on defaults as loan-to-value ratios change, and on defaults as prepayments change using default curves under various scenarios. We combine scenario analysis with a monthly surveillance process in which it compares actual delinquencies and defaults to expectations established at the time securities are acquired and expectations considering current market conditions, and performs a statistical review to determine potential losses relative to credit support of troubled loan exposures on a transaction-by-transaction basis.

Pursuant to confirmation from the Commonwealth of Massachusetts Division of Insurance, we began utilizing undiscounted cash flows to determine other-than-temporary impairments for structured securities, prospectively beginning with the quarter ended September 30, 2008. Internal inputs used in determining the amount of the other-than-temporary impairments on structured securities included collateral performance including prepayment speeds, default rates, and loss severity based on borrower and loan characteristics, as well as deal structure including subordination, over-collateralization and cash flow priority. Prior to July 1, 2008, resulting cash flows were discounted at spreads consistent with the residential mortgage market’s weakness and the uncertainty around the magnitude and timing of cash flows. This review process provided a framework for deriving other-than-temporary impairments in a manner consistent with market participant assumptions. In these analyses, credit quality by loan vintage, collateral type and investment structure were critical elements in determining other-than-temporary impairments.

We actively review the bond portfolio to estimate the likelihood and amount of financial defaults or write-downs in the portfolio and to make timely decisions as to the potential sale or renegotiation of terms of specific investments.

The NAIC defines underperforming bonds as those whose deferral of interest and/or principal payments are deemed to be caused by the inability of the obligor to make such payments as called for in the bond contract.

The following table sets forth bonds in NAIC Classes 5 and 6 split between performing and under-performing status:

NAIC Class 5 and 6 Bonds
Carrying Value

	December 31, 2008	December 31, 2007
	(In Millions)	
Performing:		
Public	$ 54	$ 42
Private	247	211
Total performing	301	253
Under-performing:		
Public	190	80
Private	223	93
Total under-performing	413	173
Total	**$ 714**	**$ 426**

We employ a systematic methodology to evaluate declines in fair value below book value. The methodology to evaluate declines in fair value utilizes a quantitative and qualitative process ensuring that available evidence concerning the declines is evaluated in a disciplined manner. The book values of investments are written down to fair value when a decline in value is considered to be other-than-temporary.

The following is an analysis of the gross unrealized losses aggregated by bond category and length of time that the securities were in a continuous unrealized loss position.

	December 31, 2008					
	Less than 12 months			12 Months or longer		
	Fair Value	Unrealized Losses	Number of Issuers	Fair Value	Unrealized Losses	Number of Issuers
	($ In Millions)					
U. S. government	$ 202	$ 4	37	$ 20	$ 1	28
States, territories and possessions	367	10	29	24	3	1
Special revenue	209	12	36	41	4	9
Public utilities	734	59	87	202	42	27
Industrial and miscellaneous	10,520	1,788	1,240	5,228	2,928	655
Credit tenant loans	58	4	6	-	-	-
Parent, subsidiaries and affiliates	849	249	8	429	293	7
Total	**$12,939**	**$ 2,126**	**1,443**	**$ 5,944**	**$ 3,271**	**727**

Note - The unrealized losses in this table include $84 million of unrealized losses on NAIC category 6 bonds.

The following is an analysis of the gross unrealized losses aggregated by bond category, length of time that the securities have been in a continuous unrealized loss position and investment grade.

	December 31, 2008					
	Less than 12 months			12 Months or longer		
	Investment Grade	Below Investment Grade	Total	Investment Grade	Below Investment Grade	Total
			(In Millions)			
U.S. government	$ 4	$ -	$ 4	$ 1	$ -	$ 1
States, territories and possessions	10	-	10	3	-	3
Special revenue	12	-	12	4	-	4
Public utilities	58	1	59	27	15	42
Industrial and miscellaneous	1,298	490	1,788	2,527	401	2,928
Credit tenant loans	-	4	4	-	-	-
Parent, subsidiaries and affiliates	62	187	249	90	203	293
Total	**$ 1,444**	**$ 682**	**$2,126**	**$ 2,652**	**$ 619**	**$3,271**

For industrial and miscellaneous, the majority of the unrealized losses in both categories above continued to grow as the widening of credit spreads, the continuing decline in the credit markets, liquidity, bank loan values and other uncertainties were reflected in current market values. These factors continue to impact the value of RMBS bonds and have now spread to the broader bond market significantly affecting values in leveraged loans and CMBS. Deterioration of underlying collateral or downgrades of credit ratings may lead to further declines in value.

Based on our policy for the evaluation of impairments, as of December 31, 2008, we have not deemed these investments to be other-than-temporarily impaired because the book value of the investments is expected to be realized based on our analysis of fair value or, in the case of structured securities, undiscounted cash flow, and we have the ability and intent not to sell these investments until recovery, which may be at maturity.

Mortgage Loans

Mortgage loans represented 15% of the total investments in the general account as of December 31, 2008. Mortgage loans consist of whole loans on commercial real estate and residential mortgage loan pools. Commercial mortgage loans as a percentage of the mortgage loan portfolio were 78% as of December 31, 2008.

Commercial Mortgage Loans

Our commercial mortgage loan portfolio, which includes mezzanine loans, consisted of fixed and variable rate loans on completed, income-producing properties.

As of December 31, 2008 and 2007, 99% of the commercial mortgage loan portfolio consisted of bullet loans. Bullet loans are loans that do not fully amortize over their term.

We had $366 million of bullet loans scheduled to mature during 2008 of which 17 loans totaling $249 million, or 68%, were paid in full, and 7 loans for $117 million, or 32%, extended their maturity. Past experience with regard to bullet maturities, however, is not necessarily indicative of future results.

As of December 31, 2008, we had 17 loans within our commercial loan portfolio with valuation allowances totaling $58 million.

The maturities of our commercial mortgage loans are well diversified, and we carefully monitor and manage them in light of our liquidity position.

The following tables set forth the commercial mortgage loan portfolio by property type and geographic distribution:

Commercial Loans by Property Type
December 31,

	2008		2007	
	Carrying Value	% of Total	Carrying Value	% of Total
	($ In Millions)			
Office	$ 3,636	39%	$ 3,107	36%
Apartments	2,604	28	2,434	28
Industrial & other	1,630	18	1,704	19
Retail	745	8	803	9
Hotels	654	7	694	8
Total	**$ 9,269**	**100%**	**$ 8,742**	**100%**

Commercial Mortgage Loans by Geographic Distribution
December 31,

	2008		2007	
	Carrying Value	% of Total	Carrying Value	% of Total
	($ In Millions)			
West	$ 3,052	33%	$ 2,986	34%
Southwest	1,618	17	1,153	13
Northeast	1,313	14	1,285	15
Midwest	1,302	14	1,239	14
Mid-Atlantic	856	9	810	9
Southeast	617	7	623	7
Canada	511	6	646	8
Total	**$ 9,269**	**100%**	**$ 8,742**	**100%**

Residential Mortgage Loans

We do not originate any residential mortgages but invest in residential mortgage loan pools which may contain mortgages of subprime credit quality. As of December 31, 2008 and 2007, we had no direct subprime exposure through the origination of residential mortgage loans or purchases of unsecuritized whole-loan pools. We purchase seasoned loan pools, most of which are FHA insured or VA guaranteed. As of December 31, 2008 and 2007, we had mortgages with residential mortgage-backed exposure with a carrying value of $2,607 million and $2,660 million, respectively, most of which were FHA insured or VA guaranteed.

Mortgage Loan Portfolio Surveillance and Under-Performing Investments

We actively monitor, manage and directly service our commercial mortgage loan portfolio. We perform or review all aspects of loan origination and portfolio management, including lease analysis, property transfer analysis, economic and financial reviews, tenant analysis, and management of default and bankruptcy proceedings.

We re-value under-performing properties each year and re-inspect these properties at least every other year based on internal quality ratings. The criteria used to determine whether a current or potential problem exists includes borrower bankruptcies, major tenant bankruptcies, requests for restructuring, delinquent tax payments, late payments, loan-to-value or debt service coverage deficiencies, and overall vacancy levels.

We have identified no current or potential problem mortgage loans consisting of restructured mortgage loans as of December 31, 2008 or 2007. There were no commercial mortgage loans in process of foreclosure or in default as of December 31, 2008. The AVR contains a mortgage loan component, which totaled $22 million as of December 31, 2008 and $85 million as of December 31, 2007. See "Investment Reserves."

Real Estate

Our real estate portfolio includes real estate properties we occupy and real estate we originally acquired as investments or through foreclosure or deed in lieu of foreclosure. There was no foreclosed real estate as of December 31, 2008. Foreclosed real estate had a carrying value, net of write-downs, of $10 million as of December 31, 2007.

As of December 31, 2008, our real estate portfolio consisted of 45 properties with a statement value of $1.1 billion of which $125 million was occupied by us. As of December 31, 2007, our real estate portfolio consisted of 53 properties with a statement value of $1.2 billion of which $132 million was occupied by us. The portfolio uses leverage to maximize return with $282 million and $257 million in third party non-recourse debt outstanding as of December 31, 2008 and 2007, respectively.

The following tables illustrate the diversity of our real estate portfolio by property type and geographic distribution:

Real Estate by Property Type
December 31,

	2008		2007	
	Carrying Value (In Millions)	**% of Total**	**Carrying Value (In Millions)**	**% of Total**
Hotels	$ 551	51%	$ 580	49%
Office	491	45	516	44
Industrial & other	23	2	31	2
Apartments	13	1	42	4
Retail	7	1	7	1
Total	**$ 1,085**	**100%**	**$ 1,176**	**100%**

Real Estate by Geographic Distribution
December 31,

	2008		2007	
	Carrying Value (In Millions)	**% of Total**	**Carrying Value (In Millions)**	**% of Total**
Mid-Atlantic	$ 250	23%	$ 223	19%
Northeast	240	22	311	26
West	211	19	213	18
Southeast	209	19	209	18
Southwest	137	13	184	16
Midwest	38	4	36	3
Total	**$ 1,085**	**100%**	**$ 1,176**	**100%**

We review individual property valuations on an annual basis. Asset managers establish our real estate valuations using third party valuation software which projects income on a lease-by-lease basis. Included in the valuation are budgeted expenses, leasing assumptions, and capital expenditures. We review these valuations for technical accuracy, methodology and the appropriateness of the assumed rates of return.

Generally, external independent appraisers value a sample of properties each year. For 2008, this sample constituted 12 properties, or 27%, of the properties in the real estate portfolio. As of December 31, 2008, our real estate and other invested asset AVR totaled $373 million.

Partnerships and LLCs

Partnership and LLC holdings, at carrying value, had characteristics of:

	December 31, 2008	December 31, 2007
	(In Millions)	
Common stocks	$ 2,943	$ 3,007
Real estate	1,176	1,045
Preferred stocks	730	455
Low income housing tax credits (**"LIHTCs"**)	235	236
Mortgage loans	89	97
Other	47	35
Total	**$ 5,220**	**$ 4,875**

The gain and loss activity of partnerships and LLCs was as follows:

	Years Ended December 31, 2008	2007	2006
		(In Millions)	
Gross realized capital gains on sales	$ 18	$ 9	$ 67
Gross realized capital losses on sales	(1)	-	(2)
Other-than-temporary impairments	(397)	(98)	(9)

Partnerships and LLCs, except for investments in partnerships which generate LIHTCs, are accounted for using the equity method with the change in the equity value of the underlying investment recorded in surplus. When it appears probable that we will be unable to recover the outstanding cost of an investment, or there is evidence indicating an inability of the investee to sustain earnings to justify the carrying value of the investment, an other-than-temporary impairment is recognized in realized capital losses reflecting the excess of the cost over the estimated fair value of the investment. The estimated fair value is determined by assessing the value of the partnership or LLC's underlying assets, cash flow, current financial condition and other market factors. Distributions not deemed to be a return of capital are recorded in net investment income when received provided there are undistributed earnings in the partnership or LLC.

As of December 31, 2008, we did not hold any partnerships or LLCs with significant subprime exposure. For the year ended December 31, 2008, one partnership with significant Alt-A exposure held by us and liquidated prior to year end, Quantitative Enhanced Decisions Fund, had an actual cost of $78 million and related gross realized losses from current year other-than-temporary impairments of $43 million prior to liquidation.

We invest in partnerships which generate LIHTCs which are carried at amortized cost unless considered impaired. Under the amortized cost method, the excess of the carrying value of the investment over its estimated residual value is amortized into income during the period in which tax benefits are allocated. We had $235 million of partnerships and LLCs which generate LIHTCs as of December 31, 2008 and $236 million as of December 31, 2007. These investments currently have unexpired tax credits which range from one (1) to ten (10) years and have an initial fifteen (15) year holding period requirement. For determining other-than-temporary impairments on LIHTC investments, we use the present value of all future benefits, the majority of which are tax credits, discounted at a risk free rate ranging from 1.7% for future benefits of two years to 3.4% for future benefits of ten years or greater, and compares the results to its current book values. Other-than-temporary impairments for the year ended December 31, 2008 were $3 million and for the year ended December 31, 2007 were $4 million. There were no write-downs or reclassifications made during the years ended December 31, 2008 or 2007 due to forfeiture or ineligibility of tax credits or similar issues. In addition, there are no LIHTC investments currently subject to regulatory review.

Derivatives

Our principal derivative market risk exposures are interest rate risk, which includes the impact of inflation, and credit risk. Interest rate risk pertains to the change in fair value of the derivative instruments as market interest rates move. We are exposed to credit-related losses in the event of non-performance by counterparties to derivative financial instruments. In order to minimize credit risk, we and our derivative counterparties require collateral to be posted in the amount owed under each transaction, subject to threshold and minimum transfer amounts that are functions of the rating on the counterparty's long term, unsecured, unsubordinated debt. Additionally, in many instances, we enter into agreements with counterparties that allow for contracts in a positive position, where we are due amounts, to be offset by contracts in a negative position. This right of offset, combined with collateral obtained from counterparties, reduces our exposure. Collateral pledged by the counterparties was $3,158 million as of December 31, 2008 and $968 million as of December 31, 2007. Market value exposure at risk, in a net gain position, net of offsets and collateral, was $77 million as of December 31, 2008 and $314 million as of December 31, 2007. Negative values in the carrying value of a particular derivative category can result from a counterparty's right to offset positions in multiple derivative financial instruments. We regularly monitor counterparty credit ratings and exposures, derivatives positions and valuations, and the value of collateral posted to ensure counterparties are credit-worthy and the concentration of exposure is minimized. We monitor this exposure as part of its management of the Company's overall credit exposures.

The following tables summarize the carrying values and notional amounts of our derivative financial instruments:

	December 31, 2008			
	Assets		Liabilities	
	Carrying Value	Notional Amount	Carrying Value	Notional Amount
	(In Millions)			
Interest rate swaps	$ 2,068	$ 34,204	$ 405	$ 3,706
Currency swaps	237	1,170	35	629
Equity and credit default swaps	87	817	(7)	89
Options	1,146	5,708	(81)	752
Interest rate caps and floors	3	750	-	-
Forward contracts	6	1,459	28	1,089
Financial futures – long positions	-	517	-	-
Financial futures – short positions	-	93	-	-
Total	**$ 3,547**	**$ 44,718**	**$ 380**	**$ 6,265**

	December 31, 2007			
	Assets		Liabilities	
	Carrying Value	Notional Amount	Carrying Value	Notional Amount
	(In Millions)			
Interest rate swaps	$ 892	$ 47,318	$ (20)	$ 2,886
Currency swaps	179	1,143	157	677
Equity and credit default swaps	32	1,253	(4)	153
Options	263	8,685	(36)	732
Interest rate caps and floors	-	140	-	-
Forward contracts	-	570	8	976
Financial futures – long positions	-	254	-	-
Financial futures – short positions	-	186	-	-
Total	**$ 1,366**	**$ 59,549**	**$ 105**	**$ 5,424**

Notional amounts do not represent amounts exchanged by the parties and thus are not a measure of our exposure. The amounts exchanged are calculated on the basis of the notional amounts and the other terms of the instruments, which relate to interest rates, exchange rates, security prices, and financial or other indices.

Investment Reserves

We establish and record appropriate write-downs or investment reserves in accordance with statutory practice.

We determine the fair value of bonds in accordance with principles established by the SVO using criteria that include the net worth and capital structure of the borrower, the value of the collateral, the presence of additional credit support, and our evaluation of the borrower's ability to compete in a relevant market.

In the case of real estate and commercial mortgage loans, we make borrower and property-specific assessments as well.

In compliance with regulatory requirements, we maintain an AVR. The AVR is a contingency reserve to offset potential losses of stocks, real estate investments, partnerships and LLCs, as well as credit-related declines in bonds, mortgage loans, and derivatives.

As of December 31, 2008, the AVR totaled $395 million, which represents a 74% decrease from December 31, 2007. This decrease was primarily due to current year after-tax unrealized capital losses of $931 million related to common stocks, realized capital losses of $729 million related to bonds, preferred stocks, and short-term investments, and $322 million related to real estate and other invested assets.

The following table presents the change in total asset valuation reserves for the years 2008 and 2007:

	Total Asset Valuation Reserves				
	Bonds, Preferred Stocks and Short-term Investments	**Mortgage Loans**	**Real Estate and Other Invested Assets**	**Common Stock**	**Total**
	(In Millions)				
Balance at December 31, 2006	$ 423	$ 75	$ 627	$ 569	$ 1,694
Reserve contributions (withdrawals) [(1)]	156	5	(178)	4	(13)
Transfers among categories	56	(56)	(35)	35	-
Net realized capital gains (losses) [(2)]	(522)	(14)	37	101	(398)
Net unrealized capital gains (losses) [(3)]	18	75	309	(170)	232
Net change to AVR [(4)]	(292)	10	133	(30)	(179)
Balance at December 31, 2007	131	85	760	539	1,515
Reserve contributions (withdrawals) [(1)]	533	80	117	502	1,232
Net realized capital gains (losses) [(2)]	(729)	(5)	(322)	(110)	(1,166)
Net unrealized capital gains (losses) [(3)]	65	(138)	(182)	(931)	(1,186)
Net change to AVR [(4)]	(131)	(63)	(387)	(539)	(1,120)
Balance at December 31, 2008	**$ -**	**$ 22**	**$ 373**	**$ -**	**$ 395**

The amounts adjusted to bring the reserves up to zero were $350 million for common stock and $277 million for bonds.

(1)Amounts represent contributions calculated using a statutory formula plus amounts we deem necessary. The statutory formula provides for maximums that, when exceeded, cause a negative contribution. Additionally, these amounts represent the net impact on surplus for investment gains and losses not related to changes in interest rates.

(2)These amounts offset realized capital gains (losses), net of tax, that have been recorded in net income. Amounts include realized capital gains (losses), net of tax, on sales not related to interest rate fluctuations, such as repayments of mortgage loans at a discount, mortgage loan foreclosures, and real estate permanent write-downs.

(3)These amounts offset unrealized capital gains (losses), net of deferred tax, recorded as a change in surplus. Amounts include unrealized losses due to market value reductions of common stocks, bonds with NAIC quality rating of 6, and preferred stocks with NAIC quality ratings of 4 through 6, net of changes in the undistributed earnings of subsidiaries.

(4)Amounts represent the reserve contributions (note 1) plus transfers and amounts already recorded (notes 2 and 3). This net change in reserves is recorded as a change in surplus.

Quantitative and Qualitative Information about Market Risk

All non-guaranteed separate account assets and liabilities have been excluded from the following discussion since all market risks associated with those accounts are assumed by the contract holders.

Assets, such as bonds, stocks, mortgage loans on real estate, policy loans and derivatives are financial instruments, which are subject to the risk of market volatility and potential market disruptions. These risks may reduce the value of our financial instruments or impact future cash flows and earnings from those instruments. We do not hold or issue any financial instruments for the purpose of trading.

We have market risk exposure to changes in interest rates, which can cause changes in the fair value, cash flows, and earnings of certain financial instruments. To manage our exposure to interest rate changes, we use sophisticated quantitative asset/liability management techniques. Through asset/liability management we match the market sensitivity of assets with the liabilities they support. If these sensitivities are closely matched, the impact of interest rate changes is effectively offset on an economic basis as the change in value of the asset is offset by a corresponding change in the value of the supported liability. In addition, we invest a significant portion of our investment funds in high quality bonds in order to maintain and manage liquidity and reduce the risk of default in the portfolio.

Based upon the information and assumptions we used in our asset/liability analysis as of December 31, 2008, we estimate that a hypothetical immediate 10% increase in the 10-year treasury rate, approximately twenty-one (21) basis points, would decrease the net fair value of our financial instruments by $0.8 billion. Whereas, a hypothetical immediate 10% decrease in the rate would increase the net fair value of our financial instruments by $0.9 billion. A significant portion of our liabilities, such as insurance policy and claim reserves, are not considered financial instruments and are excluded from the above analysis. Because of our asset/liability management, a corresponding change in fair values of these liabilities, based on the present value of estimated cash flows, would significantly offset the net change in fair value of assets estimated above.

Revenues and profitability from variable products will vary from period to period, driven in part by changes in the capital and equity markets. Specifically, certain fees we charge for variable annuity product separate accounts are based on the separate account asset levels. Separate account asset levels change as the underlying investments' market values change. Based on our experience, management believes that a 10% change in the equity markets would change the annualized fees by approximately $13 million.

We offer secondary guarantees with substantially all new annuity products primarily in the form of guaranteed minimum death benefits (**"GMDB"**), guaranteed minimum accumulation benefits (**"GMAB"**), guaranteed minimum income benefits (**"GMIB"**) and guaranteed minimum withdrawal benefits ("**GMWB**"). The profitability of these products can also vary as our obligation related to secondary guarantees changes with capital and equity market volatility.

The reserves related to these secondary guarantees (including cash flow testing reserves) were $732 million as of December 31, 2008, which approximates 7.8% of the related annuity account value. We paid $5 million for GMDB in the year ended December 31, 2008. There were no payments for other secondary guarantees during 2008. We assess the risks associated with secondary guarantees in the overall context of risk management, but do not reinsure the risks associated with secondary guarantees.

We sell certain universal life and variable universal life contracts which include features such as GMDBs, or other guarantees that ensure continued death benefit coverage when the policy would otherwise lapse. The value of the guarantee is only available to the beneficiary in the form of a death benefit. The net liability for guarantees on universal life and variable universal life type contracts as of December 31, 2008 was $981 million.

Risks related to credit markets

Credit risk is the risk that issuers of investments owned by us may default or that other parties may not be able to pay amounts due to us. We attempt to manage our investments to limit credit risk by diversifying our portfolio among various security types and industry sectors.

Beginning in 2007, the slowing of the U.S housing market, rising residential mortgage rates, and relaxed underwriting standards by residential mortgage loan originators led to higher delinquency and loss rates, reduced credit availability and reduced liquidity in the residential loan market. We have implemented a stringent review process for determining the nature and timing of other-than-temporary impairments on securities containing these risk characteristics. Cash flows were modeled for selected bonds deemed to be at risk for impairment using prepayment and default assumptions that varied according to collateral attributes. Bonds with nontrivial credit exposure were modeled across a variety of prepayment and default scenarios, spanning the range of possible outcomes specific to each individual security. Fair values resulting from internal models are those expected to be paid in an orderly transaction between market participants at the financial statement date.

The fair value of residential mortgage-backed securities, commercial mortgage-backed securities, and commercial mortgage loans are highly sensitive to evolving conditions that can impair the cash flows realized by investors. Determining fair value is made more difficult by the lack of observable prices, uncertainty of credit ratings, and the current liquidity crisis which may continue into the foreseeable future. The ultimate emergence of losses is subject to uncertainty. If defaults were to increase above the stresses imposed in our analysis or collateral performance was worse than expected, management would need to reassess whether such credit events have changed our assessment of other-than-temporary impairments and estimates of fair values given the underlying dynamics of the market and the expected performance of these assets. A significant, unexpected credit event could change management's view of these assets. The liquidity crisis continues to adversely affect lenders' underwriting appetite for new financing arrangements and hence could lead to a diminished ability to refinance the underlying collateral. Also, continued down turns in the economy and real estate market and increased unemployment will likely result in higher defaults and ultimately, increased recognition of other-than-temporary impairments.

In response to the deterioration of Collateralized Debt Obligations (**"CDOs"**) backed by residential mortgage-backed securities in 2008 and 2007, the trading markets for all CDO-related structured products have been adversely affected by reduced liquidity. We have investments in CDOs that are exposed primarily to the credit risk of corporate bank loans, corporate bonds or credit default swap contracts referencing corporate credit risk. Most of these structured investments are backed by corporate loans and are commonly known as Collateralized Loan Obligations. The portfolios backing these investments are actively managed and diversified by industry and individual issuer concentrations. Due to the nature of CDOs which complicate an evaluation of the underlying collateral, the overall negative economic environment, and resulting reduced market liquidity, the risk premium of CDOs have increased and resulted in declining prices. The steep decline in economic activity in the fourth quarter of 2008 will continue to affect the economic performance of the collateral pool of each CDO. Management believes its scenario analysis approach, based on actual collateral data and forward looking assumptions, captures the level of default risks in each pool including refinancing risks. However, in a rapidly changing economic environment, the risk in each collateral pool will be more volatile.

The current liquidity crisis has also resulted in increased risks related to our investments in domestic and European leveraged loans. European leveraged loans typically have speculative grade ratings. While default rates were low in 2007 and 2008, the weakening of world credit markets may have negative consequences in the future. In addition, the liquidity crisis continues to adversely affect lenders' underwriting appetite for new financing arrangements and hence could lead to a diminished ability to refinance the underlying collateral which could lead to increased defaults.

Management's judgment regarding other-than-temporary impairments and estimated fair value, including the difficulty of obtaining readily determinable prices impacted by the current illiquid credit market environment, for RMBS and other investments including leveraged loan exposure, depends upon evolving conditions that can alter the anticipated cash flows realized by investors. Further deterioration of market conditions and related management judgments of other-than-temporary impairments and fair value could negatively impact our results of operations, surplus, and the disclosed fair value.

Additional market risks exist due to our investments in common stocks which are in a significant unrealized loss position. We believe these losses are temporary because of the high level of volatility in the equity market and the sectors of the economy in which the securities participate have the potential for recovery. We will monitor these investments and related markets and if there are not signs of recovery in the near term, management would revise expectations accordingly, and update its assessment of other-than-temporary impairments.

Market risk arises within MassMutual's employee benefit plans to the extent that the obligations of the plans are not fully matched by assets with determinable cash flows. Pension obligations are subject to change due to fluctuations in long-term interest rates as well as factors such as changes in inflation, salary increases and the longevity of members. Therefore, MassMutual is exposed to the risk that market fluctuations could result in assets which are insufficient over time to cover the level of projected benefit obligations. In addition, increases in inflation and members living longer could increase the pension and postretirement obligations. Management of MassMutual determines the level of this risk using reports prepared by independent actuaries and takes action, where appropriate, in terms of setting investment strategy and determining contribution levels to MassMutual's benefit plans. As of December 31, 2008, the qualified pension plan was underfunded by $367 million.

Continuing Market Impact

As of December 31, 2008, impairments were expected to be approximately $275 million related to residential mortgage-backed securities and collateralized debt obligations as a result of the first quarter 2009 implementation of the use of discounted cash flows in connection with SSAP No. 98, "Treatment of Cash Flows When Quantifying Changes in Valuations and Impairments, and Amendment to SSAP No. 43 – Loan–backed and Structured Securities." The impact of applying SSAP No. 98 to other types of structured securities has not yet been determined, but may adversely impact the results of operations and financial condition. Assets, such as bonds, stocks, mortgage loans on real estate, policy loans and derivatives are financial instruments, which are subject to the risk of market volatility and potential market disruptions. Subsequent to December 31, 2008, overall markets have fallen, risk spreads have widened and volatility has increased. Continued deterioration of market conditions may cause increased impairments and declines in our asset valuations, which in turn, may result in further impairments beyond those estimated pursuant to the implementation of SSAP No. 98.

Subsequent to December 31, 2008 and on or prior to March 3, 2009, Moody's Investors Service, Inc. ("**Moody's**") downgraded a number of Option ARM residential mortgage-backed securities held by MassMutual, the majority of which had previously been rated Aaa. Pursuant to such rating action, securities representing a book or carrying value of $1.6 billion which were rated primarily Aaa by Moody's as of December 31, 2008 are now rated below Aaa but above Baa1 ($147 million), Baa1, Baa2 or Baa3 ($258 million), Ba1, Ba2, or Ba3 ($314 million), B1, B2, or B3 ($562 million) and below B3 ($367 million) by Moody's. As of December 31, 2008, MassMutual had bond investments with significant Alt-A or subprime exposures with a carrying value of $4.6 billion, of which 78.3% were rated AAA. The downgrade of the Option ARM residential-mortgage backed securities owned by MassMutual significantly reduces the percentage rated AAA. MassMutual has a review process for determining if such securities have other-than-temporary impairments that involves multiple factors. The downgrade of a security may not necessarily result in MassMutual's recognition of a related other-than-temporary impairment. *See* "Financial and Accounting Matters - Critical Accounting Policies - Other-than-Temporary Impairments."